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CONTENTS

Canadian Memorial at Longmoor

ON Sunday last the Bishop of Portsmouth dedicated a memorial window in the Garrison Church at Longmoor to Canadian railwaymen who fell in the recent war. This window was presented by the Canadian Pacific and the Canadian National Railways, which were represented respectively at the ceremony by Mr. J. C. Patteson and Mr. J. B. Thom, the European Managers. The Canadian window, like the five stained-glass windows which were presented by the main-line railway companies and the London Passenger Transport Board just before the war, is the work of Mr. Martin Travers, and is of considerable beauty and originality. Some details of the dedication ceremony are given elsewhere in this issue. Brigadier R. Gardiner, Commandant of the Transportation Training Centre, R.E., of Longmoor Camp, in a letter in our December 19 issue, referred to a proposal that, as Longmoor is to remain a permanent home of R.E. (Tn.) and R.E. (MC) personnel, a memorial for the 1939-45 war, apart from the individual ones, would be appropriate. The cost of such a window would be approximately £400, and we understand that the subscriptions are now approaching the necessary total.

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The Late Mr. W. C. Acfield

The death of Mr. W. C. Acfield, recorded in our April 23 issue, will be regretted widely by the many who knew him during his long and varied career. Beginning his career with Saxby & Farmer, he became Signal Superintendent of the former Brighton Railway when the modernisation of equipment was about to be taken in hand and the old signals, with the coloured glasses moving inside the lamp cases, abolished in favour of the now usual arrangement. He was concerned with the work occasioned by the extensive station rebuilding and widening programme, including signalling the new Victoria terminus, but went to the Midland Railway before the station was completed. As Signal Superintendent of the Midland, he was concerned with many improvements, including the rotary interlocking block. He was a Foundation Member of the Institution of Railway Signal Engineers, and President for the year 1922; and for many years was Honorary Secretary of the Association of Railway Companies' Signal Superintendents & Signal Engineers—a semi-official body, now dissolved. Highly esteemed, he had the good fortune to enjoy vigorous health until the last few weeks of his long life.

* * * *

Seat Reservations at Week-ends

A good deal of criticism has been levelled at the railways because it has not been found possible to provide for reservation of seats on trains at week-ends during the summer months on Southern and Western Region trains. The reason for this is to be found in the very heavy loadings which occur on these lines, and the difficulty of providing manpower to ensure that reservations, if permitted, were respected. Those who are familiar with the crowds and queues at Waterloo and Paddington will appreciate this difficulty, although the traveller from the North who has been able to book his seat to London may find it more difficult to understand. If reservations were undertaken, it would be desirable to restrict the issue of tickets, and this in effect would be a rationing of travel. The difficulties of getting passengers holding reservations through the crowds, or giving them precedence in queues, would add to administrative difficulties of the station staffs and most certainly would not help the expeditious dispatch of trains. Moreover, booked seats make impossible any change-over of trains to help timekeeping.

* * * *

London Transport Technical Developments

An interesting brief survey of recent technical developments in the London Transport road and rail services was given by Lord Latham on Tuesday at a meeting between Members of the London Transport Executive, Chief Engineering Officers, and Editors of the technical press. The survey showed, if indeed such was necessary, that no fundamental improvement is practicable without large capital expenditure. On the other hand the search is continuous for detail improvements, and some interesting recent developments were announced. One is that it has now been decided to provide a system of stop-

control signalling covering the stations between Green Park and Kings Cross, Picadilly Line; the work will be begun this year and completed next. This is designed to reduce the effect of disproportionately long stops at important stations, and thereby make possible a more frequent train service. The system was introduced recently at Liverpool Street, Central Line, and is working successfully. The general idea is to provide a number of home signals, associated with speed restriction signs in tunnels, that come into play when trains are delayed unduly long at the platform. These check the speed of the following train, and enable its driver to approach closer to the station at reduced speed instead of coming to a stop. On the permanent way side, it was announced that all open sections of the tube have now been equipped with de-icing equipment, with the recent completion of the Northern Line; it now remains to equip the Metropolitan and District Lines before next winter. An example of research into the design of track components is the recent installation in the track, in several locations under test, of a crossing for use in catch points where the main line is left unbroken by a crossing gap, and the catch point line is fitted with ramps which raise the wheels clear of the main line when crossing it.

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A Tribute to the Technical Press

At the outset of his statement referred to in the previous note, Lord Latham paid high tribute to the specialised press, saying that he was very conscious of the great value and the high reputation of the transport technical press of Britain, and that he wished to acknowledge the helpful, friendly, and informed criticism which the technical press has always given to London Transport and to the abundant benefits which the transport industry in general has enjoyed from the valuable means of exchange of information and of free discussion and ventilation of ideas through the technical journals. He assured his audience that it will be the policy of the London Transport Executive to make available full information about technical developments from time to time, to welcome any inquiries the transport press might wish to make, and to facilitate inspection of technical activities. He added that the technical officers of the Executive will be very ready at all times to meet the Editors and discuss matters with them. As an earnest of this goodwill, not only were questions answered freely at the meeting, but opportunity was afforded afterwards for informal conversation with Lord Latham, Mr. A. H. Grainger, Mr. A. B. B. Valentine, and technical officers, including Mr. P. Croom-Johnson (Chief Engineer), Mr. W. S. Graff-Baker (Chief Mechanical Engineer, Railways), and Mr. A. A. M. Durrant (Chief Mechanical Engineer, Road Services).

* * * *

Mersey Railway Company

On January 1 this year, the undertaking of the Mersey Railway Company was vested in the British Transport Commission, compensation becoming payable to holders of the stocks of the company by the issue of British Transport 3 per cent. guaranteed stock (1978-1988). The report for the year ended December 31, 1947, shows the following rates at which the former Mersey Railway stocks will be converted:—

Security	New stock equivalent per £1 of old security £ s. d.
4 per cent. new first perp. deb.	1 3 4½
4 per cent. perp. deb. (Act 1866)	1 3 3$\frac{9}{10}$
3 per cent. perp. deb. (Act 1871)	0 19 4½
3 per cent. perp. deb. (Acts 1882-3-5-)	0 19 4½
3 per cent. perp. "B" deb.	0 19 4½
3 per cent. perp. pref.	0 15 2½
Consolidated ordinary stock	0 7 3$\frac{3}{10}$

The net revenue received in 1947, after giving effect to the estimated operation of the financial arrangements with H.M. Government in respect of the control of the undertakings of railway companies and the London Passenger Transport Board, was £110,499. In the previous year, the company received £112,821 by virtue of the foregoing arrangements; and the report shows the sum of £296 realised from the sale of investments. Interest and dividends for 1946 and the debenture interest for 1947 together took £165,300, leaving a balance of £58,316. The directors recommend a final dividend on the consolidated ordinary stock of 2¼ per cent., comparing with 2⅛ per cent. paid in 1946. After these payments, an undistributed balance of £7 falls due to the British Transport Commission, while the balance of £2,671 brought forward from 1945 also passes to the Commission.

* * * *

Overseas Railway Traffics

Central Uruguay traffics fluctuated sharply in the fortnight ended April 17, gaining £10,805 in the first week, but only £130 in the next seven days. The aggregate result still shows a decrease of £76,970. The Leopoldina decrease of £4,690 in the 16th week was an improvement on the preceding result, when the adverse comparison with 1947 was £12,561, and brought the aggregate to within £153,609 of the previous total. Antofagasta receipts advanced by £20,250 in the week ended April 18. Paraguay Central earnings have continued to improve, increasing by G120,576 in the fortnight. Results of the South African Railways showed their first decrease for a considerable period in the week ended March 27, when receipts were £1,370 lower. In the first three weeks of March there was a total gain of £181,484. Barsi Light Railway earnings for the year to March 31 were £295,800, an increase of £23,370. The last month of the company's financial year, however, showed a decrease of £1,455 compared with 1946-47. The Rhodesia Railways recorded an increase of £612,938 in the twelve months to September 30 last year.

* * * *

More Reduced Railway Fare Facilities

The Railway Executive has announced its intention experimentally to extend cheap fare facilities from June 1. It is proposed to increase the radius over which present cheap-day tickets are available, in some cases to extend the present mid-week arrangement to any day of the week, including Sundays, and to restore circular tour tickets. As no additional trains can be run to cater for travel of this kind, the extent to which additional reduced fares can be given necessarily will be limited. Whether, indeed, it is a wise move at the present time to experiment with cheaper fares may be questioned. As we showed in our April 23 issue, the expenditure on tobacco, beer, and betting bulks so large in the budget of the lower income groups that if required, the cost of travel could be met by economy in these non-essential items. Among other income groups it would seem likely that they have become so reconciled to higher costs, that reduced fare facilities would seem strange to them. Perhaps the Railway Executive experiment is designed to be in line with the Government's call for reduced prices and the absorption of the effect in the profit margin of the undertaking. Whether there is a profit margin in the case of the railways is not yet known.

* * * *

Western Region Issues First B.R. Timetables

The first main-line timetables issued under the auspices of British Railways to reach us are those of the Western Region for the summer services beginning on May 31. They depart from G.W.R. practice by adopting the *Bradshaw* format, a decision already recorded, and omit the familiar map of the system, which made a welcome return, after being dropped since 1939, in the winter, 1946, issue. There is a link with the past, however, in the cream ground and chocolate lettering of the cover, the latter colour being used for the British Railways totem. Last year the summer timetables did not come into force until June 16, having been deferred for a fortnight as a measure of fuel economy. At that time the "Cornish Riviera" and "Torbay Express" services were restored after their fuel crisis suspension, but the "Torbay Express" left Paddington at 11 a.m. on Mondays to Fridays, calling at Taunton and Exeter. This year the train will run from Paddington daily at noon, calling only at Exeter on Mondays to Fridays and running non-stop to Torquay on Saturdays. On Mondays to Fridays this year the 11 a.m. train from Paddington will be for Plymouth, calling at Reading, Taunton, Exeter, Dawlish, Teignmouth, Newton Abbot, Totnes, and Brent; and on Saturdays to Plymouth non-stop and to Penzance.

* * * *

Steam Conditions and Steam Demand

A valuable survey of future possibilities in steam locomotives was given by Mr. J. S. Newton in a paper to the Railroad Division of the American Society of Mechanical Engi-

neers, at its annual meeting at Atlantic City, in December, 1947. Emphasis is laid on the fact that the steam locomotive is still the only form of motive power which can utilise the world's most abundant fuel—coal. In assessing the maximum duty, attention is drawn to the many diesel-electric locomotives which, though rated up to 6,000 h.p., are operated on a substantially less demand. He points out that if a more efficient steam generator could be applied to such a machine, a steam demand of 45,000-55,000 lb. per hr. should suffice for such duties, instead of the 100,000 lb. per hr. required from present-day boilers. Mr. Newton therefore advocates an increase in steam pressure and temperature, and in the example chosen by him, the initial conditions are 550 lb. per sq. in. and 900° F. A turbine is chosen as the prime mover, and an exhaust pressure of 2 lb. per sq. in. is assumed. Making suitable allowances for auxiliaries requiring saturated steam, if a boiler could absorb 10,000 B.Th.U. per lb. of coal burned (77 per cent. efficiency for coal of 13,000 B.Th.U. per lb.), a turbine would develop 4,100 h.p. on 6,000 lb. of coal per hour, with coal and water consumption about 60 per cent. of ordinary coal-burning locomotives. The problem is for boiler designers to produce a steam generator equal to these demands, within the loading gauge.

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Railways Staff Return

THE Ministry of Transport has issued, under date March, 1948, the annual return of the railway staff employed a year earlier by the railway companies of Great Britain (excluding the Manchester Ship Canal), the London Passenger Transport Board, and the Railway Clearing House. Though the census was taken in March, 1947, and much has happened since, the return deserves close attention because it reveals an increase of 8·7 per cent. in the number of staff compared with the pre-war 1938 establishment. The numbers employed in the two years before the war and in the first two years of peace were:—

March, 1937	599,650
,, 1938	607,270
,, 1946	652,253
,, 1947	660,112

The return does not explain why 7,859 more people were employed in 1947 than in the previous year. At the end of the 1947 winter, when traffic was low owing to the coal crisis, the number of officers and clerical staff was higher by 3,254, while 630 more technical staff, 302 more stationmasters and yardmasters, and 66 more traffic controllers were employed. On the other hand, only 4,698 engine cleaners were at work, compared with 6,163 in March, 1946, though there was an increase of 6,908 in "other grades (excluding labourers and watchmen)." The locomotive running department seems to have been undermanned, possibly because too much labour was diverted to less important work.

The whole question of staffing arrangements calls for special inquiry. Paybill costs are mounting rapidly. The return states that the total salaries and wages paid in 1946 amounted to £203,256,289, an increase of 9 per cent. over the 1945 total of £186,428,396. It is a pity that a figure for 1947 is not included. The amount of money paid out last year must have been known in January with sufficient accuracy for comparative purposes. The American railways employed 1,356,000 people in 1947—more than twice the British figure—and it was public knowledge early in January that the total payroll was $4,350 million, representing an average annual payment to each employee of $3,200 and an average straight time rate per hour of 116 cents. The number of employees was 2,800 less last year than the 1946 figure, though the U.S.A. railways dealt with a record peacetime traffic in 1947, and was 63,000 below the wartime peak of 1,419,500 staff in 1945.

American statistics have two great merits—they are up-to-date and are set out in a concise form to show the trend over a period of years. The whole story of staff changes from 1929 to 1947 is compressed into a table of 10 lines, two inches deep. One can see at a glance that in 1929, the peak year of prosperity between the wars, the railways employed no fewer than 1,660,850 people, and reduced that number during the slump of the 1930s to 987,675 in 1939, with a corresponding cut in paybill costs from $2,897 million to $1,863 million.

The current year offers a unique opportunity for recasting our statistical returns so as to increase their usefulness. Possibly the Ministry of Transport is already conferring with the British Transport Commission on the subject. Instead of this belated Railways (Staff) Return we should like to have in April each year a return of the staff employed by each Executive during the previous twelve months, showing the total cost and explaining any important changes. That information would be of much more value to the Ministry, and to the Commission, than the existing return can be; and also would let the public see what was happening under nationalisation.

* * * *

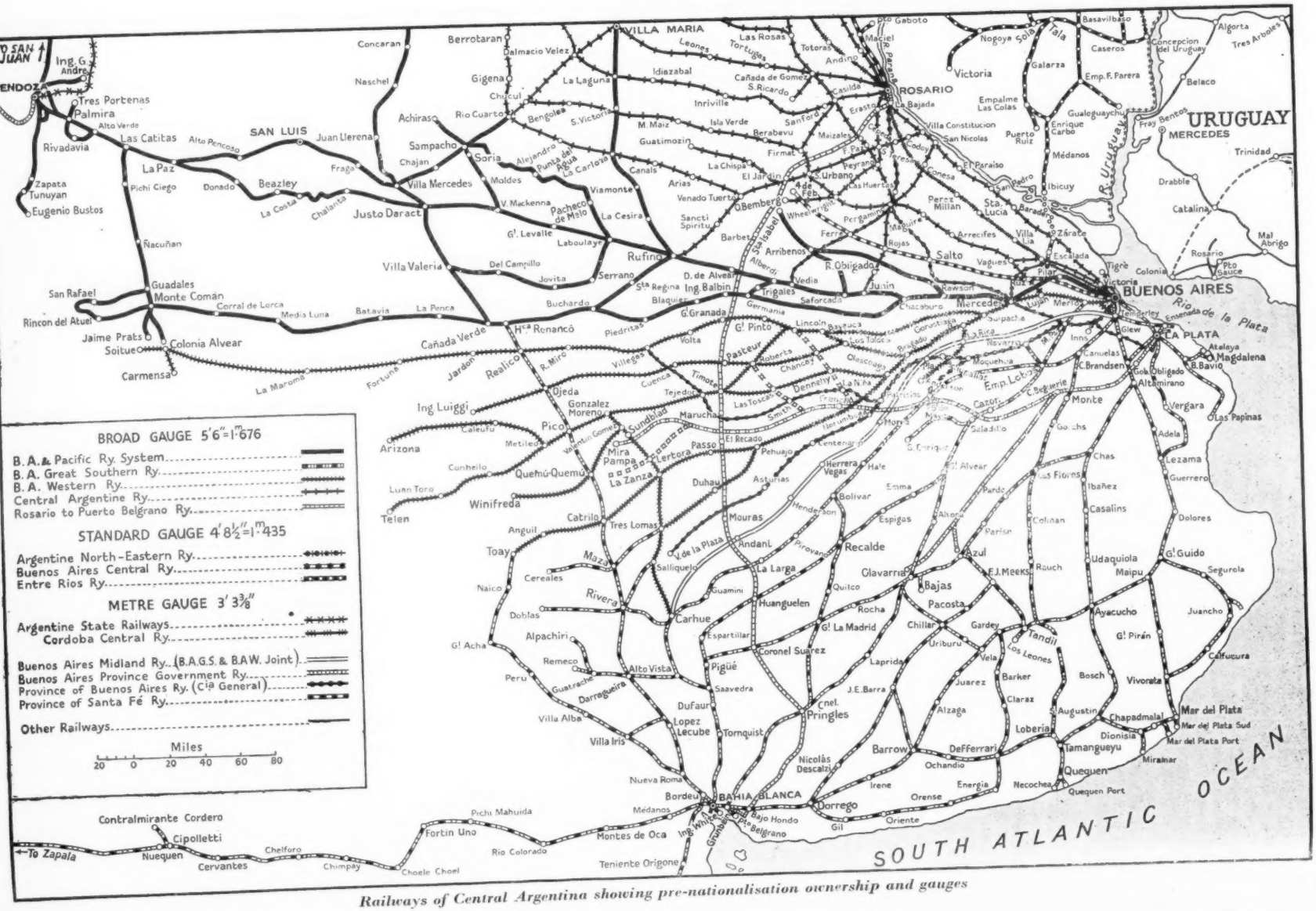
British Railways Summer Train Services

LAST year the summer main-line timetables were still affected by the fuel crisis, and were subject to a reduction in booked mileage of 10 per cent. compared with 1946. A considerable improvement will be achieved in the schedules coming into force on May 31 next, the booked mileage of 3,107,360 being 6·5 per cent. over last summer and approaching more closely to the mileage of 5,274,359 booked in the summer of 1939. A substantial extension of mileage was promised by the Railway Executive at a Press conference held by Sir Eustace Missenden in February, as reported in our February 20 issue, after an announcement by the Parliamentary Secretary to the Ministry of Fuel & Power on February 10 that the amount of coal available for the railways would be increased by 250,000 tons in an endeavour to improve holiday transport this summer. It would be sanguine to suppose that the railways will be operating otherwise than under considerable pressure, for the limited petrol ration probably will divert much traffic to the railways that otherwise might have gone by road, but the new timetables have been planned to minimise inconveniences as far as possible.

Increased cross-country services at week-ends from the Midlands and North to the South and West of England will relieve pressure on London termini and save the traveller the anxiety of competing with the London crowds for a seat after a long and perhaps tiring journey from his home station. This measure is particularly desirable in view of the fact that the Western and Southern Regions are unable to provide seat reservations on Saturdays and Sundays except on Pullman and boat trains, on account of the difficulties of supervising the claiming of seats with existing staff on days of high pressure, and because delays may make it necessary to operate a service with stock other than that intended for it. The appearance of a new Pullman service on the Southern Region—the "Thanet Belle" (see our issue of April 9)—is actually a further relief for the non-Pullman passenger, since, like the other three Southern Region "Belle" trains and the restored "Queen of Scots" Pullman, it releases additional stock for ordinary services.

What will be greeted, no doubt, as the restoration most reminiscent of the pre-war years, will be the resumption of non-stop running between London and Edinburgh by the "Flying Scotsman." The time in each direction will be 7 hr. 50 min., and the through portion for Aberdeen will arrive there 30 min. earlier than at present. The average speed to and from Edinburgh will be 50·1 m.p.h., as against 47·6 m.p.h. when non-stop running was introduced in 1928. By 1939 the speed had been increased to 56·1 m.p.h. An innovation on the 7 p.m. (Fridays) from Kings Cross to Fort William will be the introduction of the new third class sleeping car with single- and double-berth compartments which was illustrated in our January 23 issue. Connections between London, the Midlands, and Yorkshire will be augmented by the restoration of the 10 a.m. from Bradford to Marylebone and a new down train from Marylebone at 4.50 p.m., the service being named the "South Yorkshireman." The 4.50 will fill the gap left by the withdrawal of the pre-war 4.55 p.m. and 5 p.m. from Marylebone, and the up service will be increased by restoring the 2.20 p.m. from Manchester. The Eastern Region will take its part in the diversion of through traffic from London by the operation of through trains between Newcastle and Bournemouth.

Among additional facilities on the London Midland Region will be a daytime service between Euston and Ireland, *via* Holyhead. Altogether this Region will operate 600 more trains a week than last summer, and 35 more trains will have reserved



Railways of Central Argentina showing pre-nationalisation ownership and gauges

seats. Several more services are scheduled between Glasgow, Manchester, Liverpool, and Blackpool. The Western Region shows two extra daily trains from London to Plymouth and will share in the handling of numerous cross-country services, including Derby-Penzance, and Loughborough and Sheffield to Paignton. Fourteen trains from Paddington and 12 up trains will have seat reservation facilities, and there will be 16 new restaurant car services.

The principal Southern Region innovation, apart from increased Continental services consequent on removal of the travel ban, will be the "Thanet Belle" Pullman express, to which reference has been made already. Certain relief trains, not advertised previously, will appear in the timetables, and, in general, the Region will be restoring most of the steam and electric services which were withdrawn early last year to save fuel. Within the Scottish Region, the Glasgow-Aberdeen route will have increased frequency of service, and there will be an extra train in each direction between Glasgow and Oban.

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Ceylon Government Railway

SHORTAGE of rolling stock prevented full benefit being derived from the continuing buoyant traffic conditions experienced on the Ceylon Government Railway in the year ended September 30, 1946. Although military traffic fell almost to pre-war levels, there was an increase in civilian passengers, and in goods from commercial and Government sources. The report for the year, which we have received from the General Manager, Mr. J. E. S. Bodger, says that the administration was seriously embarrassed in carrying more than twice its pre-war traffic with less than its 1939 stock—much of it in the last stages of repair—as replacement, reconstruction, or heavy repair was impossible owing to shortage of materials. Revenue for the year amounted to Rs.56,308,688, against Rs.59,592,041 in 1944-45, when Service traffic was at its height. This still represented a substantial advance over the figure of Rs.28,302,436 attained in 1941-42, the last year before the period of intensive wartime activity. Some results are compared below:—

	1944-45	1945-46
	Rs.	Rs.
Passenger train receipts	30,517,053	30,418,767
Goods receipts	26,541,427	23,164,697
Miscellaneous	2,533,561	2,725,224
Total receipts	59,592,041	56,308,688
Expenditure	39,746,454	52,097,685
Surplus	19,845,587	4,211,003
	Per cent.	Per cent.
Operating ratio...	66·7	92·52

After payment of annuity (Rs. 3,765,571) and interest (Rs.56,608) there was a balance of Rs.388,324, which was transferred to deferred maintenance account. Operations during the year were interrupted seriously by a strike of workshops and running-shed staff in October, 1946. Acts of intimidation and violence culminated on October 18 in the wrecking of the Jaffna mail, resulting in 4 deaths and injury to 46 persons. Shortages of motive power and rolling stock continued throughout the year, only 8 new locomotives and 72 wagons being received. Working costs have risen rapidly, being affected by increased salary scales, dearness allowance, and greater cost of materials, and the General Manager observes that unless fares and rates are brought more into line with current price levels, the undertaking inevitably will have to be run at a considerable loss for some years to come.

Argentine Railways' Organisation

IN our last week's issue we gave some brief details of the organisation which has been established to run the railways formerly British-owned and now vested in the Argentine State. Sir Montague Eddy, who has recently returned from Argentina, has described the organisation as both simple and efficient. Its simplicity has much to commend it and it differs considerably from the organisation set up in this country.

The basis of the Argentine organisation is shown graphically below. It consists of a Special Commission constituted by Decree and consisting of Señor Miranda (President of the Economic Council of Argentina) as President, and the following three members:—General Pistarini (Minister of Public Works), Señor Cereijo (Minister of Finance), Señor Maroglio (President of the Central Bank). This body in effect replaces the boards of directors and is responsible for finance and the laying down of general policy.

The actual operation of the railways is entrusted to an Executive Committee consisting of the General Managers of the railways with an independent Chairman. Each of these managers is responsible for the operation of his own railway. As little disturbance as possible has been made to the railway organisation and each Manager controls his old civil engineering, mechanical engineering, traffic, and so forth, departments.

Every department has its appropriate committee and all matters of joint interest, such as standardisation, are dealt with jointly. The recommendations of these departmental committees are passed to the Executive Committee for decision.

The Executive Committee is entrusted with the responsibility for putting forward plans for re-organisation or unification, where necessary, to the Special Commission. The Chairman of the Executive Committee attends meetings of the Special Commission, thus ensuring close contact between the two bodies.

A number of committees has been set up to advise the Executive Committee. These include a Tariff Committee, Mechanical Committee, and similar Committees for other technical sections, a Labour Committee, and a Store's Committee.

We understand that it is the intention to avoid any undue disturbance in the existing detailed organisation of the railways. The personnel employed before the transfer of ownership has received offers of contracts of service for five years, and these contracts will then be renewed for a further five years, provided that the service has been efficient. There is little doubt that as vacancies occur, Argentine-born personnel will replace them. Already many young Argentines are showing aptitude for railway work of various kinds and some of them are expected to come to England to be trained on British Railways.

Among the advantages of the Argentine organisation is the maintenance of personal contact between the General Manager and the Departmental and District Officers, and the avoidance of disturbance to well-established lines of communication. In general, the organisation is very similar to that which worked so effectively on the British railways during the period of Government control before nationalisation. During the recent war the Railway Executive Committee was responsible to the Minister of Transport for the efficient operation of the British railways, and the boards of directors dealt with such matters as finance.

Railways of Central Argentina showing pre-nationalisation ownership

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The London Traffic Problem

36, Oakleigh Avenue,
Whetstone, N.20. April 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your correspondent's article in *The Railway Gazette* of April 2 on the Greater London Plan hardly presents a fair view of the Plan. It is true that the plans propose that development should take place outside the Central area in order to relieve overcrowding in that area; but a recurrent feature, both of the Greater London Plan and the County of London Plan which preceded it, is the insistence on the importance of reducing the time spent in travelling between home and place of work.

To this effect, among other proposals were the suggestions for the development of towns which already have local industries, such as Slough and Watford; and the establishment of satellite towns which would have industries of their own and not be just dormitories for London workers.

There are innumerable references in both plans to this effect, but two quotations are given. The first from the County of London Plan (page 7, paragraph 22):—

". . . on the other hand, the people whom it is necessary to decentralise, in order to produce these satisfactory conditions, should as far as possible have a choice of work near at hand; the aim should be to avoid their being housed in distant dormitories yet constrained to rush back to their old work-a-day haunts."

The second quotation is from the Greater London Plan (page 30):—

"The need for decentralisation (of industry) arises from the twofold desire to improve housing conditions in those areas which are overcrowded, and to reduce the concentration of industry in the London area which has caused an expansion of the metropolis to a size which has become quite unmanageable, and one which has made of Londoners a race of strap-hangers."

Mention might be made also of the Inglis Committee, which was set up as a result of the County of London Plan.

The Greater London Plan, in fact, concurs with the point of view taken by your correspondent, although anyone whose sole knowledge of the plan comes from your correspondent's article would have formed an entirely different opinion.

Yours faithfully,

D. H. MILES

"Windyridge," Vache Lane,
Chalfont St. Giles, Bucks. April 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The views of your correspondent on "The London Traffic Problem" in the April 2 issue are of interest. I doubt, however, if any future scheme for the large-scale movement of Londoners to the less populous western and north-western suburbs could be accompanied by an adequate improvement in the train services at as little cost as he suggests.

Of the three main lines shown as "lines which could carry heavier traffic," namely, Kings Cross to Hitchin, Marylebone to Princes Risborough, and Paddington to Reading, only the latter has the advantage of continuous four-way track. Since all these routes carry not only suburban trains, which themselves vary considerably in speed, but also fast long-distance passenger expresses, and slow goods trains, quadruple track seems an absolute necessity for any improvement in the services.

In the case of the Kings Cross-Hitchin main line, the congestion caused at present by the bottlenecks at Hadley Wood and Welwyn is already acute during certain times of the day, and any further burden thrown on the line, especially in the morning and evening rush hours, probably would cause many delays. These delays would be accentuated as long as the time-keeping of the long-distance trains is so erratic. Another limiting factor would be the cramped layout at Kings Cross. If an increased suburban service were possible, and great improvements could be made easily on the Cuffley loop, many trains would have to terminate at Finsbury Park, which hardly would be a popular arrangement, at least until the tube facilities are improved.

Marylebone, with only four platforms, is also unlikely to be able to cope with a very much increased burden, though the chief difficulty, I think, would be to find paths on the same tracks for trains of widely differing speeds. Even the schedules of the suburban trains vary considerably; between Gerrards Cross and Marylebone, the time of the fastest train is little more than half that of the slowest "all stations."

It seems to me, therefore, that the system of classifying the lines is incomplete. Surely the Great Northern route should have been shown as a "line carrying very heavy traffic," even though only a limited proportion of this traffic is suburban. Similarly, though the Marylebone-Princes Risborough line carries relatively light traffic, I do not believe that any far-reaching improvements could be made without quadrupling the track at least between Marylebone and Northolt Junction, to join up with the existing four-way line from there to West Ruislip. Enlargement of the terminus also would be necessary. The Paddington-Reading line seems to be the only main line to offer any great possibilities in its present state.

It is true that a tube train will accommodate far fewer seated passengers than surface stock, but is this the entire cause of the present position on the Central Line? I cannot speak from experience, but I suggest that it is only when the tube trains reach the central area that real overcrowding takes place. Though each train will take only about half the number of passengers formerly carried in the steam trains, it has been possible at least to double the frequency of the service in the rush hours. Presumably the trouble is due mainly to the fact that it is no longer necessary for everyone to alight at Liverpool Street, accentuated by the fact that the advertised frequency is not always kept, owing to the numerous breakdowns of the old rolling stock.

I consider that if further decantation of the population is prevented, an adequate train service over the routes I have mentioned could be provided merely by returning to the pre-war standards of speed, frequency, and punctuality. But if Londoners are encouraged to move to the north-western suburbs, it will take more than automatic signalling and longer trains to cope with the extra traffic.

Yours faithfully,

G. WEBB

Stephenson Valve Motion

49, Portway,
West Ham. April 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Mr. Carpenter, in his letter published in your April 16 issue, is rather understating the case of the rebuilt ex-Great Eastern Railway "1500" class of 4-6-0 locomotives, now known as the "B12" class.

From personal experience, I should have said that these engines could be worked at short cut-offs with more facility than either the "B1" or "B17" classes.

Yours faithfully,

L. THEOBALD

Metropolitan Line Uxbridge Trains

48, Boldmere Road, Eastcote,
Pinner. February 7

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The statement by the London Transport Executive on page 86 of your January 16 issue includes the information that the Baker Street-Uxbridge train service will be increased from 8 to 12 trains an hour later in the year, owing to the removal of bottlenecks at Preston Road and Harrow.

As one of the poor unfortunates who stands daily for 14 miles or more from stations on the Uxbridge line to the City, I am gratified to learn that London Transport does at least realise that we exist.

I must, however, refute the suggestion that our plight is due to the bottlenecks at Harrow-on-the-Hill and Preston Road, as at the present time about six trains for Baker Street or the City start from Harrow-on-the-Hill during the peak period between 8 and 9 a.m., and a similar number per hour terminates at Harrow-on-the-Hill during the evening peak period, a procedure which involves passing through both the bottlenecks.

Much of the accommodation on these trains is taken by people who change at Harrow-on-the-Hill in the hope of getting a seat at least as far as Baker Street after standing from stations on the Uxbridge line in the morning, and in the reverse direction in the evening.

Many of us believe that London Transport could give us a better service tomorrow by extending these trains to Uxbridge, or possibly at least as far as Ruislip, where the overcrowding appears to begin. This procedure would require no changes at all on the London side of Harrow-on-the-Hill, and one infers from the London Transport statement that the Harrow-Uxbridge line can carry at least four extra trains an hour.

May I also offer the suggestion that when the increased service from Uxbridge begins, it should include a few trains running non-stop between Harrow-on-the-Hill and Finchley Road, or at least cutting out the present Northwick Park and

Preston Road stops. This facility is offered already to Aylesbury and Watford line passengers, and would be much appreciated by the many City people on the Uxbridge line.

Yours faithfully,

J. C. FLEMONS

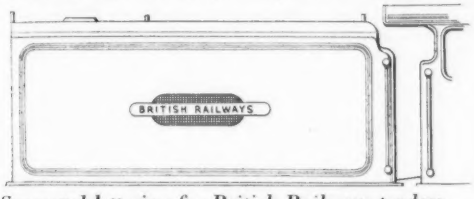
Livery of British Railways

25, Pewley Hill,
Guildford. April 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The question of name and how it should be displayed on the tenders of British Railways locomotives appears to have occupied the attention of a number of your readers.

The present design does not appear to be a very inspiring one, and the obvious solution, to me, is to make use of the



Suggested lettering for British Railways tenders

attractive panel which is appearing already at the foot of advertisements and posters issued by British Railways.

The same panel added to the tenders as shown in the enclosed sketch would look smart, and be a valuable "tie-up" between advertising the service and the service in operation.

Yours faithfully,

A. ANDERSON

146, Marlborough Road,
Romford, Essex. April 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The illustration of the Burma Railways locomotive on page 435 of your issue of April 9 gives one an impression of what "B.R." would look like on an engine of British Railways. To me it is not very impressive.

I recently saw a L.N.E.R. "B" class with the new number 61049 and "British Railways" on the tender. Although the engine was painted black, it was in spick and span condition and looked very attractive.

The fact remains that whatever colour the engines are painted, unless they are properly cleaned at frequent intervals they will revert quickly to that dingy appearance which has, for a number of years, been one of their chief characteristics.

Yours faithfully,

H. BYGRAVE

"What Life Has Taught Me"

24, Greville Place,
London, N.W.6. April 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your interesting review of "What Life Has Taught Me" in the issue of April 9, which refers to Lord Ashfield's opinion that many contacts and wide reading are necessary for those who may be called on to carry out great responsibilities, recalls the view of Arnold Bennett, expressed in "Literary Taste." Therein he asserts that "Literature . . . is the fundamental *sine qua non* of complete living"; and goes on to say that "he who has not been 'presented to the freedom' of literature has not wakened up out of his prenatal sleep. He is merely not born. He can't see; he can't hear; he can't feel, in any full sense. He can only eat his dinner."

It is indisputable that biography should be a guide since it enables the reader to get close to the minds of great men, to learn of their special qualities and how they tackled problems which beset them. The subject matter of problems changes, but greatness of mind is everlasting; it is not from the problems dealt with but from the manner of their handling that we learn from the past.

Reference in your footnote to Dr. Gilbert Murray is a reminder of another field of literature with which one should be acquainted to qualify for high rank. Some of the greatest minds which the world has ever known are to be found amongst the Ancient Greeks, and the writings of Plato, Aristotle, and Herodotus, for example, have eternal qualities which today have lessons for us in imagination, resource, clear thinking, and understanding of fellow men which are as effective and up to date as they were 2,500 years ago.

Yours faithfully,

ALUN WILLIAMS

Southern Region Rush-Hour Traffic

The Railway Executive, Southern Region,
Waterloo Station, London, S.E.1. April 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The summary of the report of the results of the "Staggering Campaign" which appeared on pages 471 and 472 of your issue of April 16 has been read with particular interest for the reason, which appeared in the memorandum by officers of the Railway and London Transport Executives, that the Southern Region figures represent over 70 per cent. of the total railway traffic concerned.

The total figures for railways given in the short table under the heading "Transport Officers' Report" at the bottom of page 471 give a wrong impression of the position in the Southern Region, and therefore the transport officers' memorandum (from which you have quoted) also gave separate Southern Region figures for the same specific periods showing the numbers actually travelling by trains as follows:—

CENSUS NOVEMBER, 1947, COMPARED WITH MARCH, 1946

P.M.	P.M.	P.M.
4.30–5	5–6	6–7
+ 4,533	+ 11,188	+ 8,264

It will be observed that these figures indicate an appreciable increase in number using the trains, and also serve to amplify the "causes for the continued congestion" referred to in the last paragraph of your report.

Yours faithfully,

S. W. SMART
Superintendent of Operation

Misleading Railway Statistics

Hampstead. April 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your issue of April 9 you refer at the end of an article on "Turn-round Time of Wagons," to the inconvenient system of weekly averages used in the *Monthly Digest of Statistics*. What is worse is the impossibility of reconciling some of the average figures with the Ministry of Transport's annual statistics. The *Digest* for March gives the weekly averages of "freight train traffic originating" as:—

4·89	million tons in		1938
4·98	,,	,,	1946
4·89	,,	,,	1947

The White Paper issued by the Ministry of Transport in June, 1947, shows the total tonnage (including livestock) for 1938 as 265,748,000, and for 1946 as 262,370,000, or 1·5 per cent. less. The 1947 total has not been published yet, but is known to be below 1946, possibly by 3 per cent.

The *Digest* is evidently unreliable in its present shape as a guide to the trend of traffic. Why does it not print the 4-weekly totals for each statistical unit which the railways compiled when they were managed by the old companies? It would then be easy to strike a cumulative total for any period, which is usually the figure one wants.

Yours faithfully,

STATISTICIAN

Railway Officers' Salaries

The Railway Executive, Eastern Region,
Goods Department, Liverpool Street Station,
London, E.C.2. April 26

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The letters of "B. Just" and "Fairplay" have aroused much interest in the Eastern Region, and point will be added to this by your editorial, "Salaries under Socialism." As salary ceilings generally apparently now will be so much lower than under private enterprise, the need becomes increasingly urgent to pay the maximum for the post within, say, a period of two years from appointment. I observe that when publicity is given to such appointments as town clerks or chief constables, invariably the starting salary is within measurable distance of the published maximum—about one jump short. If "disincentive" salaries are to be our future lot, the need to pay the full rate for the job speaks for itself.

Yours faithfully,

HENRY J. EDWARDS,
Liverpool Street

If "Regional" will send us his name and address we shall be pleased to publish his letter, but we cannot publish letters over a pseudonym unless accompanied by the name and address of the writer, not necessarily for publication, but as evidence of good faith.—ED, *R.G.*

The Scrap Heap

Train Communication Cords

Who pulls the communication cord on moving trains?

Railwaymen say the legitimate cord-pullers include: (1) Women about to give birth, (2) travellers threatened by assault, (3) passengers suddenly gripped by illness.

Frivolous yanking was done by careless umbrellas, drunks, schoolboys, an old lady who dropped her knitting out of the window, a man who remembered he had left his bath running, and a gay foreign visitor who wanted a longer look at Scottish scenery before crossing over.

Statistics for two London operating districts show that in 1947 the communication cord was pulled 89 times. Twenty-four stops were genuine, 47 were referred to the police, and in 18 cases there was no information. In one of the two districts there was a single police prosecution.—*From the "News Chronicle."*

Old Friends Translated

Recording the nationalisation of railways in Great Britain, our Spanish contemporary, *Ferroviarios*, informed its readers that British Railways had "absorbed the four great British companies, London Middland and Sootish, London & North Bastern, Great Western, and Southern Railways."

* * *

Bridges in Retirement

Commenting on the fact that parts of old bridges often continue to give service after the main structures have been replaced, *The Manchester Guardian* recalls that balusters of old Waterloo Bridge survive (though mainly as mementoes) in various parts of England. A more practical use for timber from the bridge was found by the L.M.S.R. in the construction of the "Coronation Scot" train in 1937, when veneer for the third class vestibule coaches was cut from piles which had been under water since the bridge was built in 1817.

Locomotive Re-numbering

100071, Sauchiehall Street,
Glasgow. April 19

To the Editor of "The Railway Gazette"

Sir,—In case any of your readers should be intrigued at the omission of reference to the locomotives of the Scottish Region in the British Railways re-numbering scheme, may I pass on a piece of information which reaches me by a side wind? The decision to add a hundred thousand to their present numbers (some of which already run into five figures) would necessitate not only the rebuilding of certain of the smaller tank engines, so that they may adequately display their comprehensive new designations, but also the strengthening of a number of underline bridges to carry the additional weight of the numbers.

This, it will be appreciated, must take some time, and it was therefore thought advisable to postpone the official announcement until the necessary engineering work was sufficiently advanced.—Yours truly,

S. POTTER

* * *

100 YEARS AGO

From The Railway Times, *April* 29, 1848

We earnestly hope that the deepest attention will be given to the remonstances of the Great Western shareholders and others interested in the successful development of the schemes of that Company in respect of the contemplated extensions. In these days of speculative reaction, too high a degree of caution cannot be exercised as to additional investments of capital in any but the most unexceptionable and imperatively necessary undertakings. Engineering facilities, territorial extensions, anticipations of rival Companies, all must give place to the considerations, "where can the money be raised?" and "upon whose back is the burden to lie?" But the issue is not with us; it is of no use for us to preach economy and caution, if the proprietors will not exert themselves at the right moment. Looking to the state of Companies generally, there is not one of the great lines that ought, for at least five years, to make a move towards the origination of new works or extensions. We shewed last week, from the analysis of a line of the highest character, the reversal which awaits the most ardent and sanguine anticipations as to the results of development of resources. There are but two watchwords for shareholders (which, if they neglect, let them not blame us)—"caution and economy."

* * *

Plane v. Train

Aeroplanes are a means of communication; they are not a method of travel. As one leaves the aerodrome it is interesting, for a moment, to observe the development of town-planning and the garden designs of suburban mansions; but as the machine gathers height this varied earth is reduced to a monochrome, one misses all the gradations, the baptistery at Pisa becomes a white pebble on a brown beach, the Cyclades dwindle into a few limestone rocks. Infinitely preferable are the long blue or brown trains which thread their ways across Europe through the night. How pleasurable is the memory of *wagon-lit* mornings when—after a night in which the rumble of the train, the sighs of the pneumatic brake and the tinkle upon the little table of an Evian bottle against a heavy brass ashtray had formed the undertone to dreams—one let the blind swing up and the rocks of Provence flashed into the dark compartment, pink and amethyst in the rising sun! How satisfactory it was in the early hours of the morning, to twitch the stiff blind aside and to see Olympus hanging white under a round moon!—*Harold Nicolson in "The Spectator."*

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

School for Gangers

A twelve to eighteen months' course of combined theoretical and practical instruction for apprentice gangers, with good prospects of promotion, has been planned in an endeavour to surmount the present shortage of permanent way workers.

An Earnings Record

It is announced that the total earnings of £779,826 over all sections of the Rhodesia Railways last December were the highest on record for any one month. In 1939 the average monthly train-mileage was 440,548. This has increased to a figure approximating to 600,000 miles a month. About 1,700,000 gal. of petrol are transported monthly from Beira to Rhodesia.

Report on Development Prospects

The Development Co-ordinating Commission of Southern Rhodesia, of which the General Manager of the Rhodesia Railways is a Member, has issued its first interim report, which opens with the statement that the Colony "is on the threshold of a new era."

A 50 per cent. increase in the overall economic capacity of the Colony is expected by next January, as compared with June, 1946. It is visualised that the current year will be one of consolidation and preparation for a period of substantial progress in 1949 and onwards. The report stresses that better communication is the key to the immediate future of the Colony, and advises that rail and road freight capacities should be integrated forthwith.

SOUTH AFRICA

Stores Purchased in 1946-47

Supplies received from overseas in 1946-47 consisted mainly of rolling stock, permanent way material, general stores, locomotive and carriage & wagon spares, iron, steel and castings, sleepers, brake gear, motor vehicles, tractors and spares, clothing, cloth, and uniforms, states the General Manager's report. The total amount spent on these purchases was £6,556,397.

Stores received from all sources were on the whole satisfactory. Manufacturers in Great Britain delivered 61 steam locomotives, 1 electric unit, 38 locomotive boilers, and 500 steel bogie wagons; 1,500 steel bogie wagons were received from Canada, and 684 from a South African engineering firm. The total of purchases by the Stores Department for the year 1946-47 amounted to £48,720,131.

Mutual Aid Societies

The various railway mutual aid societies have an aggregate membership of 214,000, including pensioners. The S.A.R. & H. administration is in no way responsible for these organisations, but assists them by allowing members to pay their contributions by means of paysheet deductions.

The administration makes every effort, however, to protect the interests of members by ensuring that these societies are managed on sound lines. To this end, it was arranged recently for the Government actuaries to conduct an examination into the affairs of the associations. Registration is accorded only to those mutual aid societies certified as actuarially sound. There is every indication that most of the associations are as anxious as is the administration to have their affairs conducted on sound lines.

British Aircraft for S.A.A.

During 1947, four new "Skymasters," eight Vickers "Vikings," and a further de Havilland "Dove" were added to the South African Airways fleet, bringing the total number of aircraft to 38. With a passenger capacity of 24, as against 12 in the "Lodestar" aircraft they have replaced, the "Vikings" have helped to improve the payload on the Johannesburg-Cape Town and Johannesburg-Salisbury routes, and also have proved popular with passengers. During the summer months the departure of the afternoon trip by "Skymaster" between Cape Town and Johannesburg has been changed from the early afternoon to 5 p.m. The aircraft now arrives in Johannesburg in the evening, and dinner is served during the journey.

BURMA

Goods Traffic Facilities

Since February 1, through booking of goods in full wagon loads over the Henzada ferry has been in force. This ferry connects the line from Bassein to Kyangin with the main line from Rangoon to Prome, *via* the branch from Letpadan Junction on the latter line to Tharrawaw Shore. The ferry provides the link across the River Irrawaddy.

On January 19 the ferry between Amarapura and Sagaing, across the Irrawaddy, was opened to traffic. This connects Mandalay with the lines to Yeu and Myitkyina, *via* Myohaung Junction.

INDIA & PAKISTAN

Traffic Priorities in India

The Priority Organisation on Indian railways is being extended for another year. A Bill to this effect has been passed in the Indian Parliament. The present priority list includes about 99 commodities, but the schedule attached to the Bill comprises 18 really essential items. Power is being taken in the Bill to expedite items not included in the schedule so as to meet all eventualities. The priority controllers are to be assisted by advisory committees in each area.

Planned Allocation of Transport

The Government of India has decided to set up a Standing Committee of the Central Board of Transport to review the transport position from day to day. The committee will consist of the representatives of the Ministries of Agriculture, Food, Commerce, Industry & Supply, and Railways. Ministries needing transport facilities will place their requirements before this committee, and it will try so to plan existing transport resources that these requirements are met to the maximum, and wastage of transport is avoided.

Planned rail transport is being made available already to certain important commodities. Fifteen broad-gauge train loads, including two special trains from Bombay carrying imported foodgrains, are moving every day, carrying wheat, rice, and maize. The total load moved by these 15 trains is 15,000 tons. Forty-five to 120 wagons a day are being allotted for the movement of sugar, and 30 wagons a day for jagree.

FRANCE

Progress in Reconstruction and Traffic

Railway reconstruction work, and plans now in progress, were reviewed by M. Marcel Flouret, Président du Conseil d'Administration de la S.N.C.F. (French National Railways) in a recent Paris Press conference. By the end of 1946, he said, the first stage of the reconstruction plans was completed.

Lines in operation at that time totalled 25,275 miles, including 2,174 miles of electrification. Of the 2,603 wrecked bridges, 2,460 had been rebuilt (1,410 permanently), and 59 tunnels out of 70 had been reopened. Some 600 signal boxes and 11,300 permanent fixtures had been replaced.

Shortage of Materials

Due to shortage of raw materials, rolling stock repairs went on slowly. S.N.C.F. iron and steel requirements after the liberation were estimated at 2,000,000 tons for reconstruction and 2,160,000 tons for current needs, but only 660,000 and 953,000 tons respectively had been received. In consequence, permanent way upkeep and supplies of new wagons had been delayed; but during 1948 French industry was expected to deliver several thousand wagons. Some 50,000 wagons were imported, as otherwise the S.N.C.F. would have faced an acute transport crisis last autumn.

At present a million tons of rails were needed to cope with normal permanent way renewals. Up to January 1 this year the S.N.C.F. had received only 890,935 tons of cement out of 1,360,000 tons needed. Timber required totalled 61,450,000 cu. ft., but only 33,233,000 cu. ft. were allocated. Some 24 million sleepers were needed and less than a million received. It was due largely to the railway staff's devotion to duty and tenacity, said M. Flouret, that the S.N.C.F. had been able to maintain its lines in as good condition as they were at present.

SWITZERLAND

Traffic at Basle Reichsbahn Station

Traffic between Germany and the Reichsbahn station in Basle was resumed on March 15. Services to and from that station ceased with the collapse of Germany in 1945, and it was taken over by a Swiss trustee administration, as reported in *The Railway Gazette* for June 22 and July 6 and 20.

Subsequently, two international trains, the Swiss section of the "Nord Express" and the Basle—Hook of Holland express, were operated through Germany to and from the Reichsbahn station, but passengers between German stations and Basle were not allowed to use them

Ordinary passenger trains on the Karlsruhe—Freiburg—Basle main line ran to and from Weil-am-Rhein, the first station in German territory, 2 miles out of Basle. A similar position obtained on the Basle—Waldshut—Singen main line, where trains were worked to and from Grenzach, 3 miles outside Basle. Passengers between Basle and German stations had to make their own way to or from Weil-am-Rhein or Grenzach. Fares to Germany from Basle Reichsbahn station are payable in Swiss currency only.

Manganese-Steel Axlebox Liners

Increased mileage between repairs by locomotives with manganese liners on axlebox and hornblock surfaces

WEAR of axleboxes, more than any other single feature, is responsible for requiring locomotives to be returned to the workshop for repairs, and the mileage between shoppings is directly connected with the wear-resisting properties of the materials of which the axlebox rubbing surfaces are composed. The standard arrangement of axlebox bearing surfaces on the L.M.S.R. used to be :—

(*a*) Pressed in brass, with whitemetal lining ⅛ in. thick to work on the axle journal ;
(*b*) Whitemetal lining applied direct to cast steel box on the flat surfaces, making contact with wheel boss and horn guides ;
(*c*) Cast steel horn guides, machined and ground on surfaces making contact with the axlebox.

Wear on the first of these surfaces, namely, between bearing and journal, is excessive on certain old designs of locomotives combining insufficient bearing area with high piston loads, but on modern outside or multi-cylinder types, the development of appreciable "roll" at this point is very infrequent, and the journal part of the bearing is capable of much higher mileages than the rest of the box.

It is wear on flat surfaces, indicated by (*b*) and (*c*) above, which is most serious, and it is sufficient even on modern locomotives having generous bearing surfaces to require the engine to be called into shops after mileages varying from 45 to 70 thousand, according to the route traversed and the nature of the work done.

This wear, of the order shown below, occurs particularly on the trailing coupled wheels, and increases knock and causes rough riding sufficient to bring the engine into shops:—

Increase in longitudinal clearance, box and horn 0·125 in.
Increase in lateral clearance, box and horns each side 0·0625 in.
Increase in lateral clearance, box and wheel-boss each side, 0·0625 in.

From time to time extensive trials have been made with bronze liners pegged on to the axlebox faces, as an alternative to whitemetal for the flat surfaces, but no improvement in rate of wear has been obtained, with the added trouble of loose liners to contend with in service. In 1943-4, 35 4-6-0 mixed traffic engines were built with mild steel liners welded to the axleboxes, and loose bronze liners bolted to the horn guides. Here again, no improvement in wear was experienced, and in some cases it was found necessary to renew the bronze liners between shoppings.

It became clear that any considerable improvement in shopping mileage under L.M.S.R. operating conditions would require some different material for the flat surfaces of the axleboxes, and the practice of fitting manganese steel liners to roller bearing axleboxes suggested a line of attack. Although manganese steel liners on both box and horn guides were in successful use on the motor bogies of electric stock, it was noticed that roller bearing boxes for coupled wheels in America usually had manganese steel on one of the flat rubbing surfaces only, a bronze liner being attached to the other.

On the only roller bearing locomotive of which the L.M.S.R. had experience with reference to coupled axles, a similar arrangement was in use, and it was observed that although the performance was very good, wear did develop on the bronze liner on the horns. Having regard to these facts, and to the point that the axlebox-hornblock surfaces are very difficult to lubricate efficiently, it was decided in 1944 to introduce manganese steel liners on both axlebox and hornblock surfaces. An initial trial was accordingly made on five Class "5" 4-6-0 mixed traffic engines.

The arrangement of the liners is shown in Figs. 1 to 3. The liners for both axlebox and horn guide are of channel section, the former being welded directly to the axlebox casting. The liner for the horn guide is riveted and welded to a mild steel backing plate, and the composite liner so formed is bolted to the cast steel hornblock. The object of the backing plate is to provide an easily machined member by which the width of the horn gap can be adjusted. The manganese steel liners are specified to contain 11-14 per cent. Mn., and as received from the makers are unmachined pressings complete with rivet and bolt holes, and oil grooves. Generally speaking, they are accurate in width, and the thickness only varies 0·010 in. to 0·015 in. Lubrication of horn guides is by the normal method, using trimming feed oilboxes.

Method of Fitting

The manganese liners are bedded and welded on to the steel axleboxes before the journal brass is pressed in. The faces of the liners are then machined to finished widths, using at present various methods, partly depending on the equipment available and partly in order to

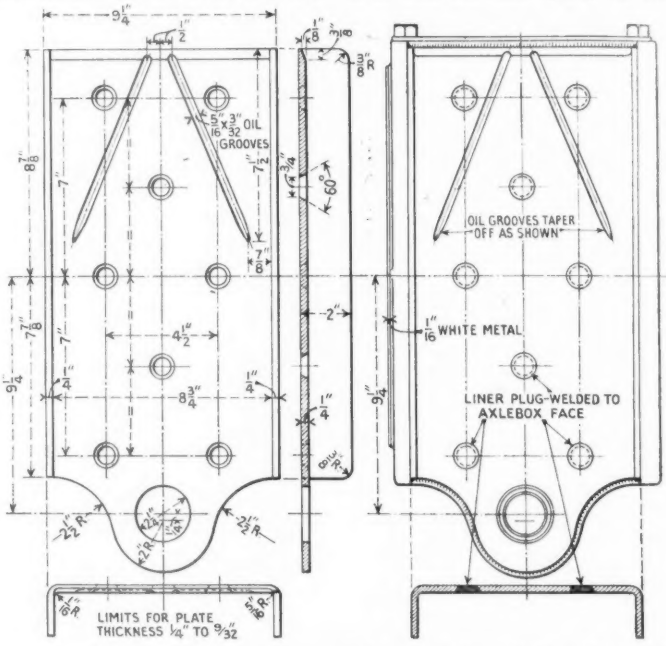


Fig. 1—Dimensions of manganese-steel axlebox liner (left) and method of attachment to axlebox (right)

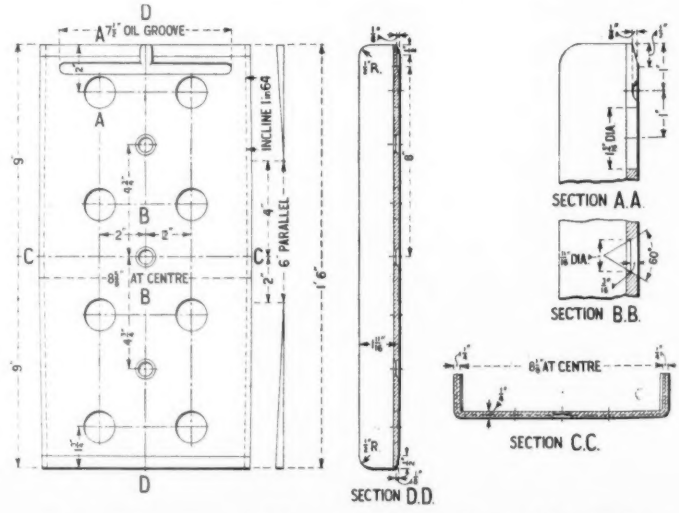


Fig. 2—Manganese-steel liner for axlebox guides and hornblocks

arrive at the most economical method for future standardisation. Any of the following methods are capable of making a good job: Planing as final finish; planing followed by final grinding; or negative rake milling followed by final grinding.

In dealing with horn guides a composite assembly is made up of manganese liner and a mild steel backing plate, the latter being machined all over, and the two being then jig drilled, riveted, and welded together round the edges. Next, the manganese steel faces of an assembly are machine-ground, and the mild steel face is machined, after which the unit is temporarily fitted to the horn guide casting, and the whole jig drilled for the securing bolts.

With the composite guides removed, the horn guides are now fitted to the engine frame and riveted in position. Measurements are taken of the distance between hornfaces and datum points marked on buttons let into the frame on either side of the horn gap (Fig. 4); and the necessary final thickness of each composite liner is calculated to provide the required total clearance between axlebox and horn guides of 0.004 to 0.008 in. The final adjustment is made by milling the mild steel face of the composite liner, the manganese face only being finish-ground to produce a level and square surface.

The object of this careful process of machining and assembling is to ensure the required working clearances between the sliding surfaces, and to guarantee that the whole of the appropriate areas are in contact so as to reduce rate of wear to a minimum. It will be noted that so far manganese steel has been applied only to the horn guide surfaces. The flat face of the axlebox against the wheel-boss continues to be of whitemetal as before.

Results in Service

Of the first five experimental engines, four had returned to the shops at the time of writing, for their first repair since fitting, when complete measurements of clearance were taken. In addition, intermediate measurements had been taken at intervals at the running sheds with wheels in position, although these latter are, of course, of limited accuracy. The mileages attained were:—

Engine No.	Miles run to repair or to date
4820	77,000
4823	61,000
4817	99,000
4818	80,000
4819	77,000 (still running)

As shopped, the average and maximum clearances in a longitudinal direction along the frame (knock) were found to be:—

	Leading boxes		Intermediate boxes		Trailing boxes	
	Average	Max.	Average	Max.	Average	Max.
	In.	In.	In.	In.	In.	In.
At repair	0·041	0·055	0·051	0·063	0·057	0·079
Nominal clearance as new	0·004 to	0·008	0·004 to	0·008	0·004 to	0·008

In every case it was primarily tyre condition which required the engine to be shopped; when it had been realised, after the first two engines had been shopped, how low was the wear in the axleboxes, appropriate attention was given in the sheds to other details, including a limited amount of tyre turning if necessary, to alow the full wear capacity of the manganese liners to be reflected in the shopping mileage. The leading features which were observed during examination in the shops and sheds were as follows:—

1.—The surfaces of the liners which are in contact with one another become work hardened in service and take on a high polish. With the first experimental engines, the rate of wear was found to be highest over the first 20 or 30 thousand miles, then settling down to a uniform low rate. This is because slight warping of the liners between the securing points has not yet been overcome entirely, and the resulting high spots get rubbed down first. It is realised that complete support of the liners from behind is necessary, and closer attention is being paid to this in further engines dealt with.

2.—A very interesting feature has been that reduction of "knock" or wear in a longitudinal direction has had also a beneficial effect on lateral wear. In all cases so far examined, wear on the axlebox flanges and horn liner sides has been negligible. Wear between wheel boss and whitemetal facing of the trailing axlebox has developed at the rate of about 0·037 in. on each side per 100,000 miles.

3.—Bolts and rivets of the horn liners have remained tight, only one case of loose rivets being found. There has been a certain number of failures of the welds along the edges of the axlebox liners during the preliminary period, when the technique of welding the liners was under development.

4.—Scoring of the liners has been negligible, limited to one or two cases

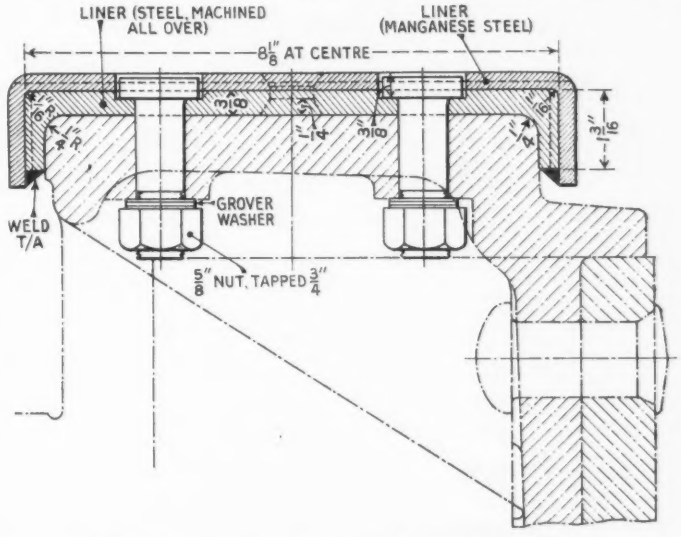


Fig. 3—Assembly of composite liner for hornblocks

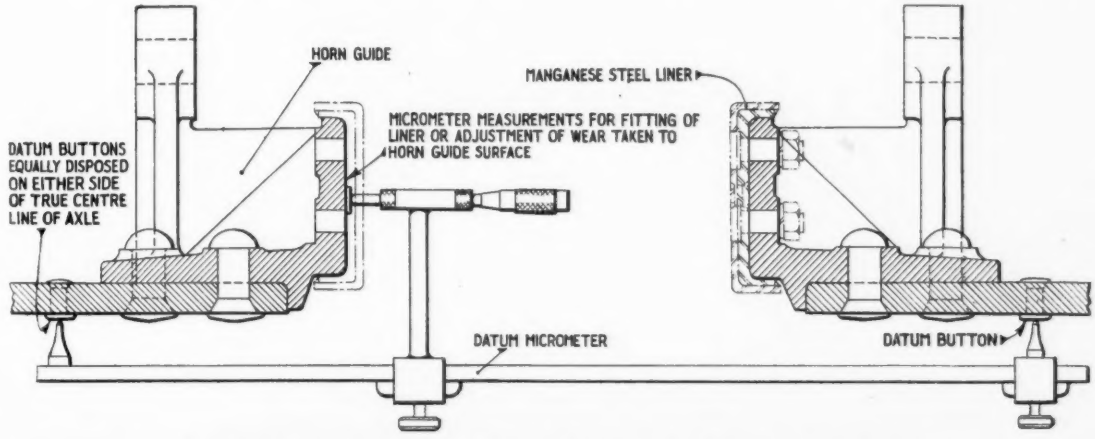


Fig. 4—Method of measuring distance between horn faces and datum points

where the lubrication proved to have been at fault.

The foregoing experience underlined an essential of repair methods, namely, not to do anything to disturb the work-hardened surface of the manganese liners, so that the engine could be sent into traffic again with the hardest possible wearing surfaces. Accordingly, all adjustments for wear and alignment are made behind the manganese liners.

Correction of the horn gap to the datum points on the frame, and to the recorded sizes of horn guides and axleboxes, is made by fitting shims between the composite liner and the horn guide castings. Thin bright steel stock is used for shimming in combinations of three thicknesses —0·0075 in., 0·022 in., and 0·030 in. With the appropriate shims fitted and the liners bolted in position again, the working clearance is restored to the same value as for new engines, and the axle centre is located correctly with the frame datum points.

So far, all the side wear has been concentrated on the whitemetalled face of the axlebox which bears against the wheel-boss, and only negligible wear has taken place on horn guide sides or axlebox flanges. Accordingly, side play is taken up by re-whitemetalling the box face in the ordinary way. If and when appreciable side wear should take place on the flanges, the manganese liners will be renewed. A minimum of hand grinding is applied to the assembled liners to touch up any high spots. The overall time required for the foregoing procedure does not exceed 2½ days per engine, and fits in with the existing repair schedule of seven or eight days.

Experience so far gained indicates that an alternative material has been found which is capable of practical application, and which offers greatly reduced rates of wear on the axlebox-horn guide surfaces. Accordingly, the manganese steel liner has been adopted as standard, and it is fitted to new construction of all types. Apart from the potential increase in shopping mileage, the liners already are proving of considerable value from an operating point of view in reducing development of rough riding. This is particularly marked on engines operating over many of the Scottish lines, where heavy working on steep gradients, and the severe curvature of the road, gave rise to the development of knock and lateral wear, with resultant rough riding at low mileages, when using the original type of materials for the bearing surfaces.

Some Russian Railway Impressions

Disparity between "hard" and "soft" class accommodation on long-distance trains

(From a Correspondent)

I WAS able recently to visit the Soviet Union after the new trade agreement, and spent three weeks of March in the Ukraine. Although cameras and binoculars were sealed strictly for the duration of my stay, I found complete freedom of movement within the cities, and was in no way interfered with or followed when using any form of public transport or walking. Travel for foreigners between cities, however, requires police permission obtained through the Intourist organisation.

It is impossible, in so vast a country as the Soviet Union, to make general observations relating to the entire nation from a few glimpses of conditions in a relatively small area; but I suggest definitely that the railways are in considerably better shape than is widely believed. They have, of course, suffered extensively from the devastations of total war, and almost all stations and goods yards in the afflicted areas were destroyed completely. The city of Odessa lost its fine new station, together with carriage sheds and a large amount of rolling stock. At Nikolaev, on the River Bug, and at other places in the Dnieper Bend, it was the same story. But a certain definite recovery has taken place—not in any way comparable to that of France—and trains appear to be running well to time, if very slowly.

At the time of my visit, there were two daily trains from Odessa to Moscow, and *vice versa*. The "fast" left Odessa at 8.9 p.m. and covered the 920-odd miles to the capital in 47 hr. 45 min. The "slow" left at 12.43 p.m., and took 67 hr. to reach Moscow. One daily express ran to Kiev at 4 p.m., and one to Kharkov at 6.33 p.m.

I observed several arrivals and departures, all of which were within 5 min. of scheduled time. The composition of the main-line trains was somewhat austere. The locomotives employed on them were, so far as my observations were concerned, American 2-8-0 "austerities" converted for the 5-ft. 6-in. gauge, or German-built Pacifics. Then came one or two luxurious sleeping cars of the "super-soft" class (Spahlnyee-Vagons, as they are called in Russia). Attached to these by a corridor connection was a restaurant car, which, like the sleepers, was heavily curtained and luxuriously appointed, and riding on bogies (in one case it was a twelve-wheeler). The next coach was a "soft class" sleeper, inferior to the others in all respects, and in some cases a six-wheeler. That was the end of the corridor-connected portion of these long-distance expresses.

The rest of the train would consist of anything from 8 to 10 four- or six-wheel coaches of the "hard class." I entered a "hard class" coach. There were tiers of wooden planks running lengthways down it, with no divisions. A stove at each end beside the door, and about six windows set rather high in the side of the coach, completed the fittings.

Suburban trains, apart from one upholstered coach, were even more primitive, and roof-riding was not uncommon. One evening there were 20° of frost, with plenty of snow on the ground, but the 6.20 p.m. local from Nikolaev to Kherson pulled out with more than a hundred men and women on the roofs.

I observed a small railcar operating on suburban lines around Odessa. It had accommodation for 12 people, and was propelled by a type of petrol-driven gangers' trolley, pushing from behind. There was a preponderance of well-worn lace curtains in the car.

For suburban work, 0-6-0 and 2-6-0 locomotives of Russian origin were employed. I saw no tank engines, not even on dock lines, where 0-8-0 double-domed, low-boiler Russian freight locomotives were much in evidence.

Despite the extensive range of heavy industrial and manual work undertaken by women in Soviet Russia, I never saw any driving trains. There were many women guards, however.

The Chesapeake & Ohio Railway Turbo-Electric Locomotives

THE first of three Chesapeake & Ohio turbo-electric steam locomotives was completed last year, for high-speed passenger traffic between Washington and Cincinnati, and was described and illustrated in our March 5 issue. A diagram showing the principal parts of these noteworthy engines appears on the opposite page, with a full-length illustration of No. 500, which was exhibited at Atlantic City, in June, 1947. The locomotive was built by the Baldwin Locomotive Works and designed by technical staffs of the C. & O., the Baldwin Locomotive Works, and the Westinghouse Electric Corporation.

The country through which the railway runs is coal-producing and, as a result, not only has the Chesapeake & Ohio been called on to handle a large coal traffic, but also encouraged to take a special interest in the coal-burning steam locomotive. These turbo-electric steam locomotives, although they do not incorporate any revolutionary components, have been constructed to a new layout, in which the coal bunker leads and is followed by the driver's cab, boiler, propulsion unit and the tender, which carries the water supply.

The locomotive power-plant uses a conventional steam boiler, producing high-pressure steam, which drives a turbine, coupled through a 6:1 reduction gear to two double-armature generators. The boiler, which faces aft, towards the tender of the locomotive, has a working pressure of 310 lb. per sq. in. and a total evaporative heating surface of 4,406 sq. ft.; there are three thermic syphons.

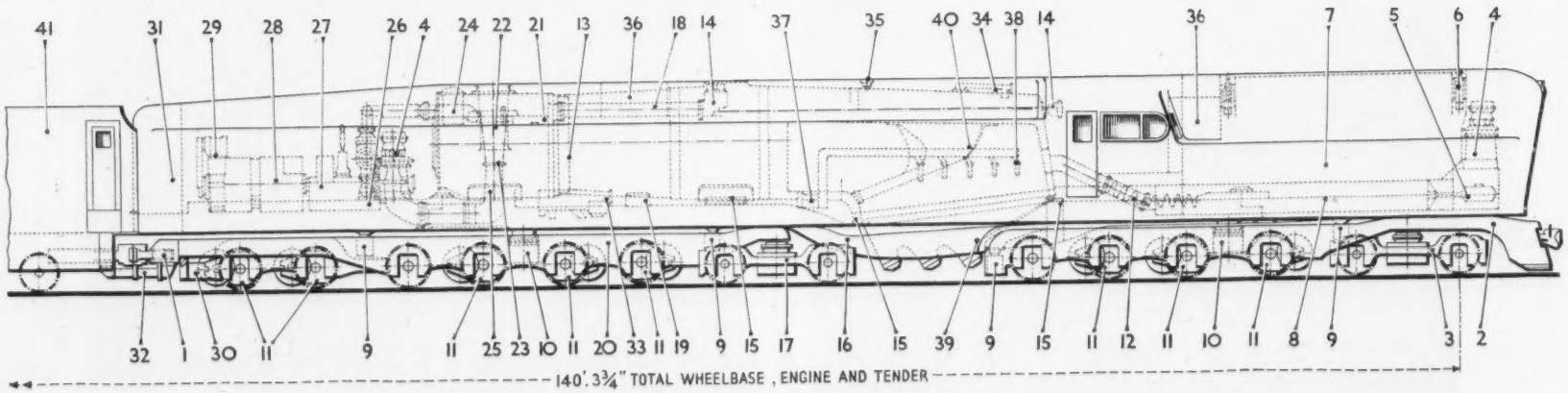
The steam turbine is of the impulse type, with a velocity-compounded impulse-control stage, followed by four full-admission impulse stages. The generators have their armatures mounted on the gear shaft with the commutators facing outward; they are eight-pole, multiple-wound, commutating-pole d.c. machines with two windings on the main poles.

General dimensions and particulars of the locomotives are shown below:—

Driving wheels, dia.	3 ft. 4 in.
Working steam pressure	310 lb. per sq. in.
Evaporative heating surface	4,406 sq. ft.
Superheating surface	1,770 sq. ft.
Grate area	112 sq. ft.
Wheelbase, rigid	17 ft. 6 in.
Wheelbase, total engine	90 ft. 7 in.
Wheelbase, engine and tender	140 ft. 3¾ in.
Weight on driving wheels	226 tons 16 cwt.
Weight, total engine	367 tons 8 cwt.
Weight, tender	166 tons
Tank capacity (water)	25,000 U.S. gal.
Fuel capacity (coal)	29 tons 5 cwt.
Tractive force (continuous)	48,000 lb.
Speed at continuous tractive force	40 m.p.h.
Maximum starting tractive force (limited by traction motors)	98,000 lb.
Maximum speed (limited by traction motors)	100 m.p.h.

Chesapeake & Ohio Railway Turbo-Electric Locomotive

A general view of the 6,000-h.p. turbo-electric steam locomotive

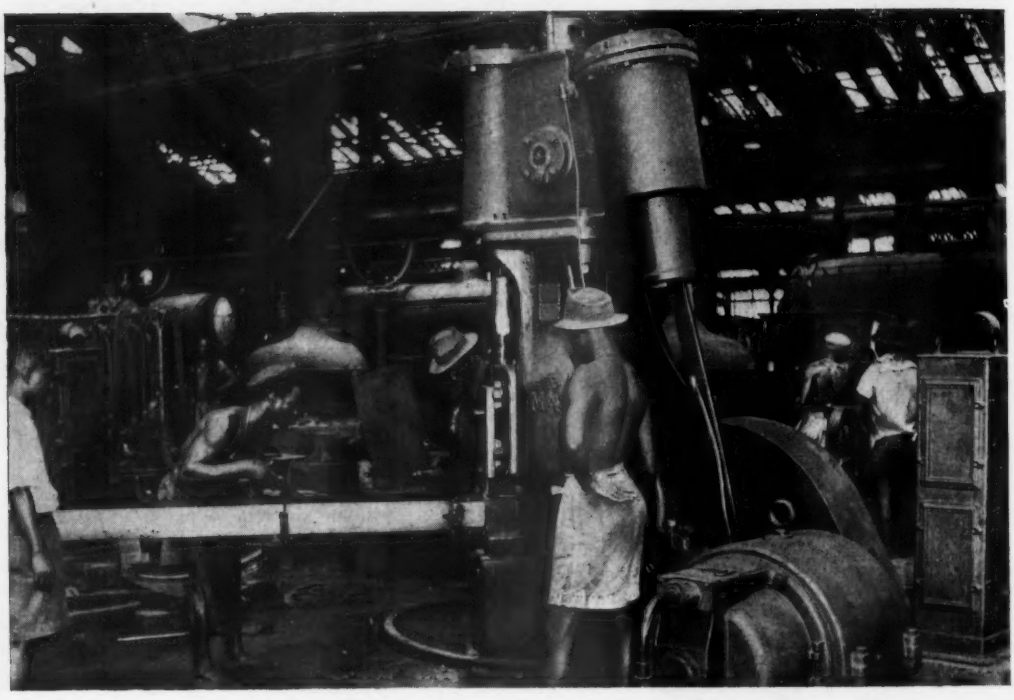


KEY TO PLAN

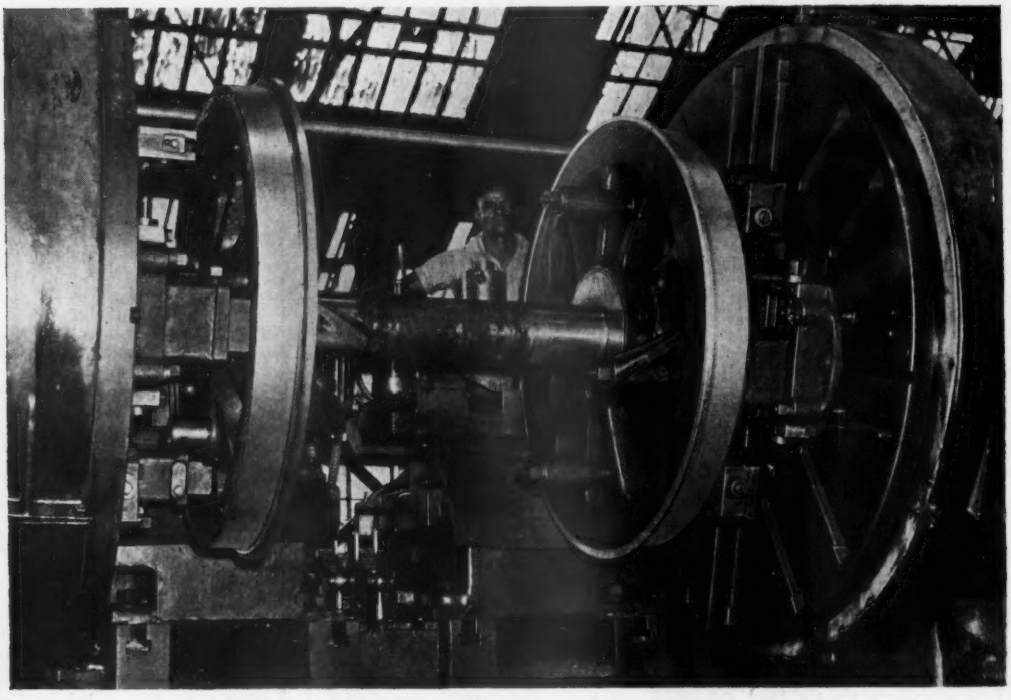
1. Pilot coupler
2. Main frame (front unit)
3. Engine bogie
4. Turbine traction motor blowers (4)
5. Stoker engine
6. Coal hatch operating cylinders (3)
7. Coal bunker
8. Stoker conveyor
9. Sliding spring supports (7)
10. Centre pins (2) (main frames)
11. Traction motors (8)
12. Stoker elevator pipe
13. Boiler
14. Steam shut-off valve and handle
15. Boiler supports—sliding (5)
16. Cab underframe
17. Intermediate bogie
18. Dry steam pipe
19. Mechanical lubricator
20. Main frame (rear unit)
21. Superheater header
22. Chimney
23. Exhaust nozzle
24. Feedwater heater
25. Boiler support—fixed
26. Main turbine
27. Reduction gearing
28. Generators (2)
29. Exciters (2)
30. Trailing bogie
31. Control compartment
32. Spring buffer
33. Hot pump
34. Steam valve stand
35. Safety valves
36. Sand box (2)
37. Smoke consumer turbine
38. Smoke consumers
39. Ashpan
40. Syphons (3)
41. Tender

Diagram showing the principal components of the new locomotive

Gold Coast Railway Workshops



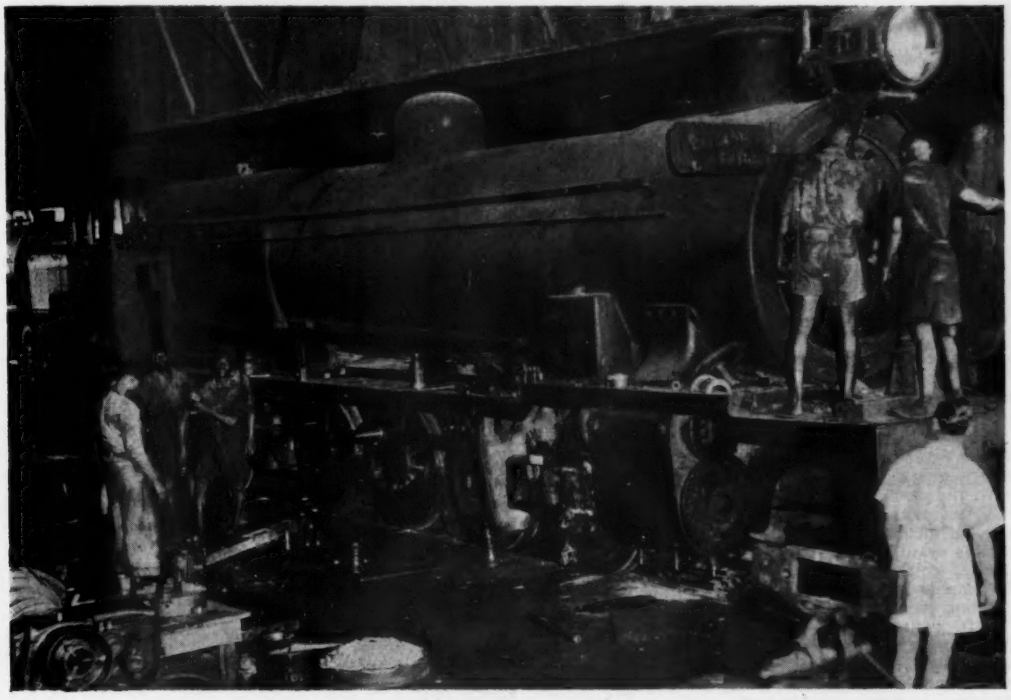
Operating a Massey hammer in the Gold Coast Railway workshops



Skilled native turner profiling locomotive wheels at Sekondi

Gold Coast Railway Workshops

General view of the locomotive erecting shop at Sekondi

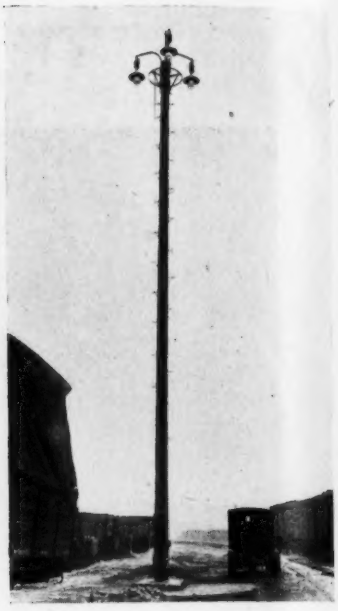


Native workers under British technicians carrying out locomotive repairs

Mercury-Vapour Lighting at Kings Cross Goods Yard

Powerful lamps in clusters 50 ft. above rail level provide even illumination similar to full moonlight

Two of the new lighting standards are seen in the above view of the yard



Cluster of lamps on 60-ft. pole

WHEN the improvement of lighting in the L.N.E.R. goods yard at Kings Cross came under consideration, difficulty was found in providing sites for additional lamp standards. The yard had been lit since 1916 by 500-watt tungsten filament lamps supported on 20-ft. poles, but the company now investigated the use of powerful lamps in groups on a relatively small number of poles of greater height. By using modern types of illuminant in these conditions, the aim was to provide a lighting system free from dazzle due to brilliant lamps being mounted at low level; and one that would not confuse or tire the eye by alternations of intense light and deep shadow in the general effect.

Filament and Vapour Lamps Compared

Two 60-ft. poles were erected in the yard experimentally in 1946, one carrying three 1,000-watt tungsten filament lamps, and the other three 400-watt mercury vapour lamps. In both cases the mounting height was 50 ft. above rail level. The experiment proved highly successful, and has led to the installation of mercury-vapour lighting throughout the yard, which is now in progress, and to which reference was made in an editorial note last week. The 60-ft. wooden lighting poles, spaced approximately 300 ft. apart, carry clusters of three 400-watt mercury-vapour lamps in Holophane bi-way reflector lanterns. A ratchet raising and lowering gear for the lamps is provided, and the associated electrical apparatus is housed in two weather-proof boxes at the foot of each mast. This consists of chokes to limit the current, the lamps having a negative resistance characteristic; condensers to improve the power factor; and individual on-off switches.

A diagram showing the distribution of light between two poles is reproduced below. The main beams are projected at 75 deg., and the height of 50 ft. above rail level at which the lamps are mounted reduces shadows to a minimum. The general lighting effect is similar to full moonlight, and the average illumination at ground level is 0·25 lumens per sq. ft. A few of the earlier tungsten filament lamps are being retained in the yard in certain positions near signals on the L.M.R. main line from St. Pancras and the Broad Street line of the same region.

The full scheme entails 20 of the 60-ft. wood poles with clusters of three mercury-vapour lamps and 4 carrying tungsten filament lamps, together with a number of smaller lamps of both types mounted on shorter poles, where intense local lighting is required, or brackets. Some of the standards illuminate the lines into the running shed, which is in the goods yard area. Each 400-watt mercury-vapour lamp is equivalent to a tungsten filament lamp rated at from 750 to 1,000 watts, so that the great improvement which is noticeable in the lighting conditions at the yard has been achieved with economy in power consumption.

Avoiding Glare and Lighting Contrasts

The new lighting system overcomes disadvantages experienced with preceding types. Attempts have been made in the past to provide the necessary illumination by means of horizontal projector lanterns with 500- to 1,000-watt lamps mounted on poles 40 to 50 ft. high, instead of the more usual installation of 200- to 500-watt tungsten filament lamps mounted on 20- to 30-ft. poles near the point positions. Neither method was completely satisfactory, on account of the unevenness of illumination throughout the yard, or the glare and contrast of illumination.

In a busy yard shunters move frequently from a well lighted area to a badly lighted area, and *vice versa*, and the eye fails to adapt itself quickly enough to the change in illumination intensity. Where the lighting is even, the eye is comfortable, and the acuteness of vision is within limits mainly dependent on the intensity of illumination available.

Distribution of light between adjacent poles, showing how height minimises shadows

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CONTRACT FOR WORK AT SOUTHAMPTON PASSENGER TERMINAL.—It was announced at the recent meeting of Maple & Co. Ltd. that one of the largest and most important contracts ever secured by the company had been received from the Railway Executive in connection with the new passenger terminal at the Ocean Dock, Southampton.

CANCELLATION OF NIGHT TRAINS IN BURMA.—Night train services between Mandalay and Rangoon were cancelled on April 24, Reuters reports, because of bandits who attacked and derailed several trains recently. The Burma Railways announced that trains would stop overnight at Toungoo, roughly half-way. The raiders are reported to be Communist bands.

New Signalling at Darnetal, French National Railways

Adoption of "free" lever frame with no mechanical or electro-mechanical gear for interlocking

THE first electric, "free" lever type signalling system to be seen in France, put in at Darnetal by the Compagnie de Signaux et d'Entreprises Electriques, was brought into use last October. It controls connections between the Paris-Havre and Amiens-Rouen lines.

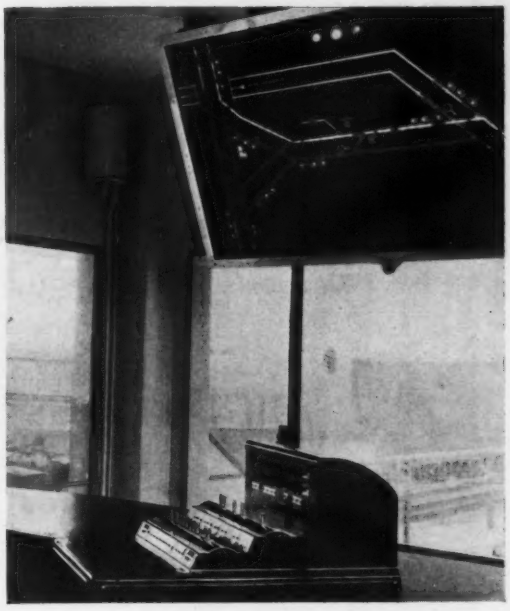
The new signal box, which deals with about 240 traffic movements daily, replaces four small mechanical boxes placed at each junction. One of these, the only one to be manned permanently, was situated at the mouth of the Ste. Catherine tunnel, and controlled the manual block working on the Paris line and the release, by means of a central key apparatus, of the levers at the three subsidiary boxes.

The new arrangement has resulted in considerably less complicated control equipment. On a vertical panel, behind the levers and in two rows, are the emergency signal switches, with interlocking gear, and the switches for cancelling the automatic locking on certain signals.

The new box has a much reduced frame, with small levers at 30-mm. (1¼-in.) centres, arranged in two parallel rows. The levers can take three positions, pulled, neutral, and pushed; and when pulled or pushed have two definite positions—the reverse position, controlling the whole of route, and the intermediate, setting the points in position but not clearing the signal.

The distinguishing feature of the new box as compared with the so-called "classic" type, is that the frame has no mechanical or electro-mechanical gear in it and performs only a selective function. Several entirely new devices are included in the installation, corresponding to the new "free lever" technique. Actually, however, it constitutes only one step towards the final solution intended to be applied by the S.N.C.F. The Darnetal box will enable the S.N.C.F. to verify the suitability and effectiveness of the new principles involved, as well as to estimate the ease of maintenance and economies resulting from the design.

The S.N.C.F. is now preparing to install new signal boxes of this type comprising other novel features. These include an even greater concentration of controls, with panels comprising very small control devices (such as knobs) acting directly, or by tele-transmission, or an electric apparatus installed wherever most convenient. Other boxes, deriving directly from the Darnetal type, will differ from it on several points, particularly in control of points.



Lever frame and track diagram

General view of the new junction signal box at Darnetal

NEW CONSTRUCTION IN JUGOSLAVIA.—In addition to the new lines in Jugoslavia, of which the construction was reported in our February 27 and March 12 issues, a third branch is now being built in the same region. This will connect Niksic in the west with Titograd (formerly Podgorica) in the east, a distance of 31·7 miles. Titograd is the northern terminus of a 12½-mile standard-gauge line from Donja Plavnica, on the northern shore of Lake Skadar; and Niksic is connected by a 2-ft. 6-in. gauge railway with Hum, on the Sarajevo—Dubrovnik line, 17·4 miles north of Dubrovnik. Between Hum and Bileca, a distance of 33½ miles, this railway has been in existence for several decades, having been built for military reasons by Austria-Hungary. The 44-mile extension from Bileca to Niksic was built by Jugoslavia and was opened a few years before the second world war. It was the second railway line in Montenegro, and the first to enter that secluded region from an inland place. The first railway in Montenegro, the Bar—Virpazar line (narrow-gauge), was built by an Italian company and entered the country from Bar, a port situated on the Adriatic coast, formerly known as Antivari. The course of the existing railway lines was shown in a map published in *The Railway Gazette* of September 8, 1944.

Stainless-Steel Castings

Free-cutting developments by the David Brown Foundries Company

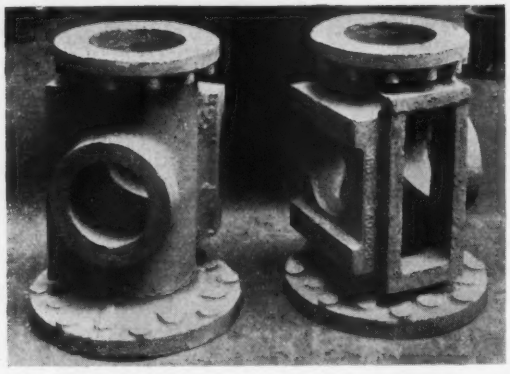
MODERN industrial plant makes extensive use of high alloy-content stainless and corrosion-resisting steels, in both the wrought form and as casting; in the past, however, production engineers have encountered serious machine-shop problems, due to the inherent characteristics of these steels—problems which are particularly pronounced in the case of the austenitic corrosion-resisting types.

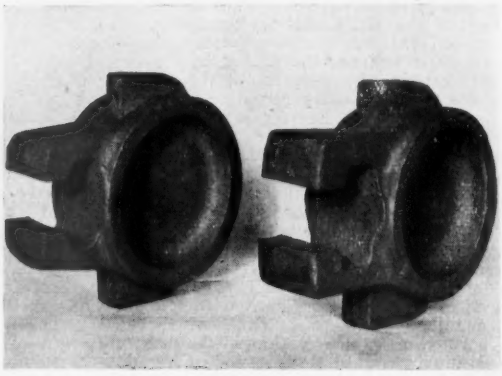
The development and application of special machining techniques have shortened the time taken in machining operations, but there are limits to the improvement which is possible from this angle. In fact, many of the precautions necessary in handling this class of steel in the machine shops, that is, special tool mountings and frequent attention to tool grinding, though reducing the actual cutting times, have been time-consuming themselves and have impeded output.

The most substantial contribution towards solving the problem has been based on a metallurgical modification, involving the addition to these classes of steel, of small proportions of special elements, which in principle follows the measures taken to improve the machinability of the straight carbon and of the low-alloy steels.

These advances, that is, the production of the free-cutting stainless steels, have been exploited in this country to a relatively small degree and this has been almost exclusively confined to the wrought form.

In recent years, however, aircraft-engine development has demanded steels of a very similar nature to the corrosion-resisting category for use at high temperatures, and for reasons of design, the components have been produced in the cast, rather than the wrought form.





Examples of castings in the free-cutting stainless steel developed by the David Brown Foundries Company; Left: Valve bodies; Right: Valve wedges

Application of Proved Measures

The complexity of the machining operations involved in these led to the application by the David Brown Foundries Company, of those measures which had previously proved successful in improving the machining characteristics of the wrought corrosion-resisting steels; arising from this, it has been found possible to extend such free-cutting characteristics to the well-known types of stainless and corrosion-resisting steels produced as castings.

The David Brown Foundries Company, whose research organisation has been mainly associated with the development of these steels, reports that this object has been achieved without reducing, to any marked extent, the mechanical and other special properties associated with such materials. Emphasis is laid on the difficulties of defining precisely the extent to which machinability has been improved, on account of the many well-known variables which make the assessment of machinability so complex. From experience in its own machine shops, the company infers that the improvement is considerable, but suggests that this best can be ascertained for particular operating conditions by trial of cast material, which is available in the following types of steel:—

(*a*) 13 per cent. chromium.

(*b*) 18 per cent. chromium; 8 per cent. nickel.

(*c*) 18 per cent. chromium; 8 per cent. nickel; 1 per cent. columbium (weldable).

(*d*) 18 per cent. chromium; 8 per cent. nickel; 1 per cent. columbium; 3 per cent. molybdenum (weldable).

(*e*) 25 per cent. chromium; 12 per cent. nickel; 3 per cent. tungsten.

The development is felt by the company to be of considerable importance in relation to present-day circumstances, under which both manpower and machine capacity are at a premium.

RAILWAY CONNECTION FOR ALBANIAN CAPITAL.—Preparations are being made in Albania for construction of a 18·6-mile standard-gauge railway to connect Durazzo with the capital, Tirana. Voluntary labour is being enlisted in the same way as for building the Durazzo—Pekinj railway (see our January 23 and April 16 issues). Preliminary work on lines from Durazzo to Tirana and Elbasan was carried out by the Italians. Part of the completed formation for the latter route was used for the new Durazzo—Pekinj line.

MODEL ENGINEERS' JUBILEE EXHIBITION.—From May 13-22, the Society of Model & Experimental Engineers, which was founded in 1898, will celebrate its Golden Jubilee by holding an exhibition in the Exhibition Pavilion of the Imperial Institute, South Kensington. This society is the oldest and largest of those created to serve the interests of model engineers. Among the exhibits will be models of steam, petrol, and other engines of all periods; working model locomotives and railway layouts; sailing ships, power boats, and aircraft. A passenger-carrying model railway will be in operation throughout the period of the exhibition. Visitors will see in operation the test stands designed and built by members of the society for taking horsepower tests on models, which it is hoped will indicate avenues of future development both in model work and full-scale practice. Further information relating to the exhibition may be obtained from the Exhibition Manager, 28, Bolton Street, London, W.1.

IMPROVING TRANSPORT IN ASIA AND THE FAR EAST.—At a meeting of the Transport & Communications Commission of the United Nations in Geneva on April 15, a recommendation was put forward by the delegate for India, Mr. V. K. R. Menon, that an early meeting should be convened of inland transport experts to study communications in Asia and the Far East. General agreement with the proposal was expressed by the representatives of France, the United Kingdom, and the United States, although it was felt that it might not be desirable for the commission to give rigid directives concerning what organisational arrangement of transport might be necessary in the Orient.

THORNYCROFT ROAD EQUIPMENT SUBSIDIARY.—At a meeting of the board of directors of John I. Thornycroft & Co. Ltd. on April 21, it was resolved that a wholly-owned subsidiary company under the title of Transport Equipment (Thornycroft) Limited should be formed to take over the road transport interests of John I. Thornycroft & Co. Ltd. Application was made on April 22, 1948, to the Capital Issues Committee for permission to be granted for the formation of this company.

RAILWAY NEWS SECTION

PERSONAL

On the joint recommendation of the Presidents of the Royal Society and the Institution of Civil Engineers, the council of the Institution of Civil Engineers has awarded the James Alfred Ewing Medal for 1947 to Professor Sir John D. Cockcroft, for specially meritorious contributions to the science of engineering in the field of research.

Mr. W. M. Hind, O.B.E., M.Inst.T., who, as recorded in our January 30 issue, has been appointed Director of Funds, Comptroller's Department, British Transport Commission, has had a career, apart from two years in the Army (terminating in 1917, when he was wounded during the battle of the Somme while a Captain in the 9th Durhams, 50th Division), in continuous and close contact with transport financial policy. For the first five years, 1909-14, as Personal Clerk to the Accountant, North Eastern Railway, he assisted his chief with the re-organisation of railway accounts under the 1911 Act and with other matters. As soon as his wound allowed of a return to light duty he joined the staff of Sir Eric Geddes and assisted in the work preparatory to the Ministry of Transport Act, 1919; on the formation of the Ministry he was associated with the drafting of the Railways Act, 1921. Much of the data considered by the Colwyn Committee on Railway Control Agreements in 1920 was prepared by Mr. Hind; and he collaborated with the railway officers engaged on the investigation of the accounts relating to the 1914-21 period of Government control. He assisted with the financial merger of London transport incorporated in the Act of 1933. He was also concerned with the drafting of new or revised forms of accounts for the railway companies (1928), the L.P.T.B. (1933) and other inland transport undertakings, and with periodical reviews of their financial aspects. During the recent war he negotiated with the controlled undertakings the agreements containing the financial terms under which railway and canal undertakings were controlled. He later became responsible for the working of those agreements when as a member of the Railway Rules Committee he was the sole representative of the Minister *vis à vis* the Chief Accountants of the railways and the Comptroller of the L.P.T.B., and, as Chairman of the Canals Rules Committee, when he was associated with the Accountants of the canal and canal carriers' undertakings. Mr. Hind assisted in the formulation of the financial proposals contained in the Transport Act, 1947. Mr. Hind became Transport Accounts Officer at the Ministry of Transport in 1938, and Deputy-Director of Finance in 1946. He was made an O.B.E. in 1942.

Mr. W. M. Hind

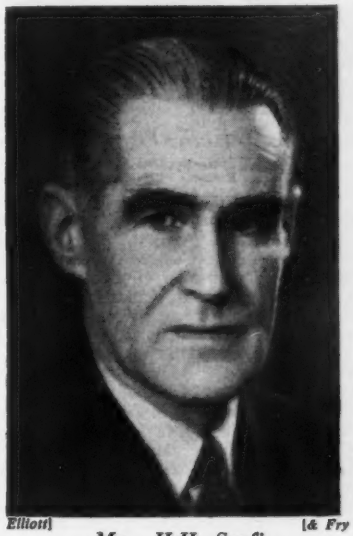
Appointed Director of Funds, Comptroller's Department, British Transport Commission

Mr. P. R. Hickman

Appointed Regional Stores Superintendent, London Midland Region, British Railways

Mr. P. R. Hickman, O.B.E., who, as recorded in our March 19 issue, has been appointed Regional Stores Superintendent, London Midland Region, British Railways, commenced his career in the Midland Railway Stores Department at Derby in 1905. In 1926 he was transferred to Euston and appointed Assistant (Stores Inspection) to the first Chief Stores Superintendent. In 1930 he became General Assistant. From 1943-45 his services were transferred to the Ministry of War Transport, to act as Chief Superintendent of Sea Transport Stores. In that capacity he made several visits abroad, including the U.S.A., Canada, India, Ceylon, South Africa, Mediterranean area and North-West Europe. He resumed his duties with the L.M.S.R. in January, 1946, as General Assistant, and in May of that year was appointed Assistant Chief Stores Superintendent. He was awarded the O.B.E. in the King's Birthday Honours, 1946.

Mr. H. H. Swift, B.E., M.I.E.E., who, as recorded in our March 12 issue, has been appointed Acting Electrical Engineer, Eastern & North Eastern Regions, British Railways, was educated at St. Peters College, Adelaide, South Australia, and at the Adelaide University, where he obtained the degree of Bachelor of Engineering. He subsequently entered the works of Siemens Schuckert in Berlin, and on the outbreak of the 1914-18 war was interned as a civilian prisoner-of-war at Ruhleben. After the war, Mr. Swift entered the Dick Kerr Works of the English Electric Co. Ltd. at Preston, and in 1922 was sent to Japan to handle electric traction work in that country, and in particular to put into operation a large number of electric locomotives, which had been ordered by the Japanese Government Railways from the English Electric Co. Ltd. In 1926, Mr. Swift returned to this country and in the same year proceeded to South Africa as resident engineer for the English Electric Co. Ltd., in charge of rolling stock for the electrification of the Capetown-Simonstown section of the South African Railways.



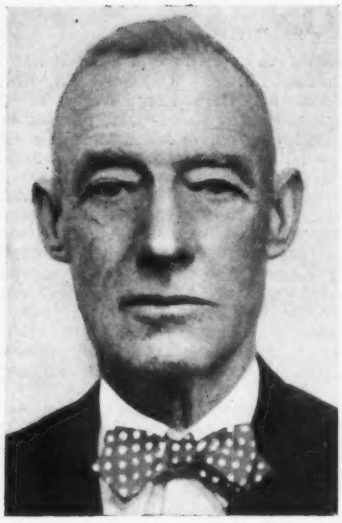
Elliott [*& Fry*

Mr. H.H. Swift

Appointed Acting Electrical Engineer, Eastern & North Eastern Regions, British Railways

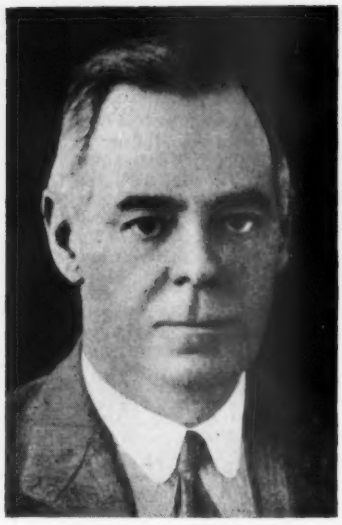
From 1930 to 1934, Mr. Swift was Chief Assistant to the Manager and Chief Engineer of the Traction Department of the English Electric Co. Ltd. and in 1934 he was made Assistant Manager of the department. During this period, he was responsible for several important traction schemes, among which were the equipments for the electrification of the Copenhagen suburban lines and the electrification of the Warsaw suburban system of the Polish State Railways. He was a member of the contractors' committee set up to handle the work on this latter contract. In 1936, Mr. Swift joined the L.N.E.R. as Assistant Electrical Engineer and chiefly has been engaged in the scheme work for the electrification of the lines between Manchester and Sheffield and from Liverpool Street to Shenfield. In 1941 Mr. Swift was appointed Assistant Chief Electrical Engineer of the L.N.E.R. when the department of the Electrical Engineer was separated from that of the Chief Mechanical Engineer.

Mr. T. Pride, who, as recorded in our January 23 issue, has retired from the position of Chief Storekeeper, Buenos Ayres & Pacific Railway, entered the Chief Engineer's Department of the Buenos Ayres & Rosario Railway (later amalgamated in the Central Argentine system) in 1896. In 1904 he was transferred to the Stores Department in Rosario, where, after



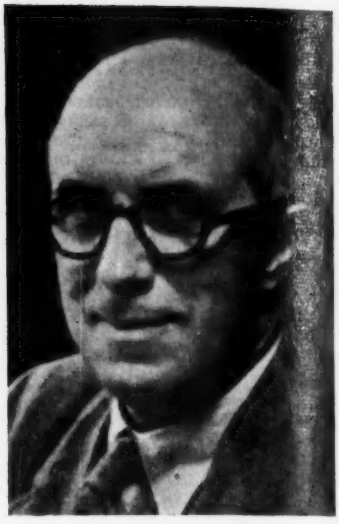
Mr. T. Pride

Chief Storekeeper, Buenos Ayres & Pacific Railway, 1934-48



Mr. D. C. Manington

Traction Superintendent, Entre Rios Railways and Argentine North Eastern Railway, 1920-48



Mr. E. S. Bradley

Appointed District Engineer, Newcastle, N.E. Region, British Railways

occupying various positions, he was appointed Chief Assistant in 1911. He resigned from the Central Argentine Railway in 1928, and later entered the service of the B.A.G.S.R. as Chief Assistant to the Stores Superintendent, and was made Stores Superintendent in 1931. On June 1, 1934, he accepted the position of Chief Storekeeper of the Buenos Ayres & Pacific Railway. In 1942 Mr. Pride was appointed representative in the U.S.A. of the privately-owned Argentine railways for the purchase of materials during the critical period of the war. He returned to Argentina in January, 1946, and resumed his duties as Chief Storekeeper.

Mr. Douglas Charles Manington, A.M.I.Mech.E., who has retired from the position of Traction Superintendent, Entre Rios Railways and Argentine North Eastern Railway, was born in London on August 3, 1884, and was educated privately. After serving a mechanical-engineering apprenticeship, he entered the Way & Works Department, Entre Rios Railways, in 1900. In 1904 he joined the staff of the Locomotive Superintendent, Central Argentine Railway, at Rosario, and in 1906 entered the Traction Department, Buenos Ayres Great Southern Railway. In the next year, on returning to the Entre Rios Railways, he was appointed Assistant, Traction Section, Traffic Department, and in 1908 was transferred, with the whole section, to the then newly-formed Transportation Department, being placed in charge of outdoor carriage and wagon maintenance. In 1912, on a reorganisation, Mr. Manington was appointed Chief Assistant, Traction Section, Chief Mechanical Engineer's Department, and in June, 1915, was placed in charge of that section, occupying the post until he volunteered for active service. He was commissioned in the Railway Operating Division, R.E., with which he served in France and Belgium. After demobilisation he was appointed Traction Superintendent, Entre Rios Railways, in 1919, and in the next year became Traction Superintendent also of the Argentine North Eastern Railway.

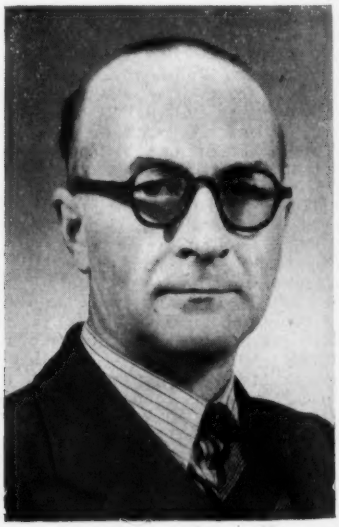
Mr. E. S. Bradley, M.B.E., A.M.I.C.E., District Engineer, York, North Eastern Region, British Railways, who, as recorded in our March 26 issue, has been appointed District Engineer, Newcastle, commenced his railway training under Mr. C. F. Bengough in the District Engineer's Office at Bishop Auckland, North Eastern Railway, where he was made Chief Draughtsman in 1924. In 1928 he was appointed Assistant District Engineer at Darlington. While there he was responsible for the construction and layout of the new District Engineer's permanent way shops, and for the experimental work on, and after-

Mr. S. J. Marchant

Principal Assistant to Chief Officer for Labour & Establishment, L.M.S.R. and London Midland Region, 1944-48

Mr. H. T. G. Miller

Appointed Acting Commercial Assistant to the Superintendent of the Line, Western Region, British Railways



Mr. F. J. Wymer

Appointed General Assistant to Chief Regional Officer, Southern Region, British Railways

wards the construction of, the Central Permanent Way Reclamation Depot; he also improved the method for relaying permanent way by the use of cranes. He became District Engineer, Hull, in May, 1939, where during the war he received the M.B.E. for outstanding service in connection with the many air raids on that city. In January, 1944, Mr. Bradley was appointed District Engineer, York.

Mr. S. J. Marchant, Principal Assistant to the Chief Officer for Labour & Establishment, London Midland Region, British Railways, who retired on March 31, entered the service of the former Midland Railway at Leicester in 1901. After experience in goods station work, during which he acted as District Relief Clerk, he was appointed Chief Staff Clerk, Leicester, in 1916. In 1918 he was transferred to the General Manager's Office, and there began his close association with staff negotiations. He became Personal Assistant to the Assistant to the General Manager (Staff & Labour) following the 1923 amalgamation, and in 1931 was made Wages Staff Assistant to the Chief Officer for Labour & Establishment. He was appointed Principal Assistant to the Chief Officer for Labour & Establishment in January, 1944. For many years he was Secretary of L.M.S.R. Sectional Councils Nos. 2, 3 4 and 5, and from 1923 to 1939 acted as Assistant to the Railway Companies' Advocate at hearings of the National Wages Board and the Railway Staff National Tribunal. Mr. Marchant's retirement has also involved the severance of his connection with the Railways Staff Conference, and its Standing Sub-Committee, of which he had acted as Chairman for many years; and on April 15, at a luncheon at the Charing Cross Hotel, he received a presentation from the conference and the standing subcommittee, when Mr. O. W. Cromwell(Chief Officer for Labour & Establishment, Southern Region), Chairman of the conference, and Mr. G. R. Robinson, the new Chairman of the sub-committee, spoke in appreciation of Mr. Marchant's ability and personal qualities. Mr. Marchant, in acknowledging the presentation, expressed his thanks for the help and co-operation he had always received from his many friends and colleagues.

Mr. H. T. G. Miller, who has been appointed Acting Commercial Assistant to the Superintendent of the Line, Western Region, British Railways, joined the Great Western Railway in 1904 at Shepton Mallet, and after several years of general station experience was transferred to the Divisional Superintendent's Office at Bristol. During the 1914-18 war he served overseas with the Royal Engineers (Signals) and was awarded the Military Medal. In 1922 he took up duties as an outdoor representative in the Worcester Division, where he remained until 1934, when he was transferred to the Office of the Superintendent of the Line, taking charge successively of the Claims and Passenger Rates Sections. Mr. Miller has served on the R.C.H. Claims Committee and also represented the Western Region on various other committees dealing with rates and road-rail matters. He was also for ten years a member of the G.W.R. Central Ambulance Committee, and is a Serving Brother of the Order of St. John.

Mr. F. J. Wymer, C.B.E., M.Inst.T., who, as recorded in our issue of January 30, has been appointed General Assistant to Chief Regional Officer, Southern Region, Railway Executive, was educated at Merton Court School, Sidcup, and Eltham College, Mottingham. During the war he enlisted in the Royal Horse Artillery in 1916, and subsequently was commissioned in the Royal Garrison Artillery and served in France and Germany, 1917-19. He was Captain and Adjutant when demobilised. In 1920, Mr. Wymer joined the S.E.C.R. as probationer and he was appointed to the Rolling Stock Section, Superintendent of the Line's Office, in 1923. In the next year he was transferred to the Trains Section of the London (East) Division, and to the Chief Operating Superintendent's Department in 1928. Mr. Wymer was appointed Assistant to the London (Central) Division Superintendent in 1930, and Assistant to the Traffic Manager for Special Work in 1931; he remained in the latter position until becoming Divisional Marine Manager, Dover & Folkestone, in 1934. In 1938 he was appointed Assistant Continental Superintendent, and in 1942 he became Assistant (Planning) to the General Manager. In 1945, Mr. Wymer was appointed Assistant Docks & Marine Manager, and in 1947, Assistant to Traffic Manager for Special Purposes. Mr. Wymer was made a C.B.E. (Military Division) in the Kings Birthday Honours of 1943, for his work in connection with the Southern Railway Home Guard.

Mr. C. S. Lock, Press Officer, Western Region, Paddington Station, British Railways, has been appointed Press Officer to the Railway Executive. At the beginning of this year he was lent to the Railway Executive to assist in the setting up of the Press Office.

Mr. H. A. L. Trew has been appointed Acting Press Officer of the Western Region, British Railways, Paddington Station. Mr. Trew, who was educated at St. Paul's School and Magdalene College, Cambridge, was on the editorial staffs of *The Referee; Torbay Herald & Express*, Torquay; and the *Western Evening Herald*, Plymouth; before becoming Editor of the *Western Weekly News*, Plymouth. He joined the Press Section of the Great Western Railway in 1937.

We regret to record the death on April 21, at the age of 73, of Mr. John McGlashan, C.I.E., M.I.C.E., who retired in 1930 from the position of Chief Engineer, Calcutta Port Trust.

Mr. John Schofield, Chief Architect, Canadian National Railways, has retired, and is succeeded by Mr. George F. Drummond. Mr. Schofield will continue as Chief Architect of Trans-Canada Air Lines.

Among those recently elected Members of the Institution of Mechanical Engineers is Mr. Hugh Randle, Works Assistant to Chief Mechanical Engineer, Western Region, British Railways. Mr. Antony Vickers, a Director of the Hydraulic Coupling & Engineering Co. Ltd., is among those transferred from associate membership to full membership of the Institution.

Mr. Philip Whysall has retired from the service of the Westinghouse Brake & Signal Co. Ltd. His career in railway signalling started in 1904, when he joined the Signal Department of the Underground Electric Railways of London. In 1908 he joined McKenzie & Holland Limited, and on the formation of the McKenzie, Holland & Westinghouse Power Signal Co. Ltd., he joined that firm as Assistant to Chief Engineer (Mr. H. G. Brown). In 1911 Mr. Whysall was appointed Signal Engineer of the District Railway and London Electric Railway, later including the Central London Railway and the City & South London Railway. In 1919 he became Northern District Representative for McKenzie & Holland with an office at Leeds; that firm was later incorporated in the Westinghouse Brake & Signal Co. Ltd., and in 1931 he went to the London office, where he remained until his retirement.

Colonel Sir Eric Gore Browne (lately Chairman, Southern Railway Company) has been appointed Deputy-Chairman of Alexanders Discount Co. Ltd.

We regret to record the death on April 23, in his 80th year, of Mr. James Flind, at one time General Manager, La Guaira & Caracas Railway.

Mr. J. S. Stockton, hitherto Assistant Works Manager, Saltley & Washwood Heath, Metropolitan-Cammell Carriage & Wagon Co. Ltd., has been appointed General Production Manager, Cravens Railway Carriage & Wagon Co. Ltd., Sheffield.

We regret to record the death on April 25, at the age of 82, of Sir William Reavell, founder and Managing Director of Reavell & Co. Ltd., Ipswich. He was President of the Institution of Mechanical Engineers in 1926, and President of the British Engineers' Association from 1930 to 1936.

Major-General Sir Donald McMullen, who reaches the age limit for his rank in July, is now home in the U.K. on leave pending retirement from the Army. Major-General McMullen has been Deputy Chief (Executive) of the Transport Division of the C.C.G. in Germany since the autumn of 1945. From 1940 to 1945 he was Director of Transportation at the War Office.

Southern Region Appointments

The following appointments have been made in the Southern Region, British Railways:—

Commercial Department

Mr. W. H. Corney to be Passenger Assistant.

Mr. P. W. Gessey to be Freight Assistant.

Mr. B. T. Wright to be Staff Assistant.

Mr. A. W. Blackman to be Deputy Staff Assistant.

Mr. G. F. W. Still to be Assistant London District Freight Superintendent, *vice* Mr. A. W. Blackman.

Continental Department

Mr. H. J. Bourn to be Assistant Continental Superintendent, *vice* Mr. R. E. Sinfield (now Continental Superintendent).

Mr. E. W. Dean to be Passenger Assistant, *vice* Mr. H. J. Bourn.

Docks & Marine Department

Mr. J. H. Jellett to be Docks Engineer, *vice* Mr. M. G. J. McHaffie, retired.

C.M.E. Department

Mr. M. G. Burrows to be Assistant (Locomotives), *vice* Mr. M. S. Hatchell (now Principal Assistant (Locomotives) to C.M.E., London Midland Region).

Operating Department

Mr. R. McPherson to be Staff Assistant (Operating).

Mr. F. G. Marshall to be Staff Assistant (Motive Power Section).

Operating/Commercial Departments

Mr. A. Blaker to be Assistant to London Central Divisional Superintendent, *vice* Mr. R. McPherson.

Longmoor Memorial to Canadian Railwaymen

Dedication in the Garrison Church of stained-glass window presented by Canadian Pacific and Canadian National Railways

On Sunday morning last the Bishop of Portsmouth, Dr. W. L. Anderson, dedicated a stained-glass window in Longmoor Garrison Church as a memorial to Canadian railwaymen who fell in the recent war. The window, which was designed by Mr. Martin Travers, was presented by the Canadian National and Canadian Pacific Railways, and was unveiled by the High Commissioner for Canada.

Among those attending the Dedication Service were:—

The High Commissioner for Canada (Mr. Norman A. Robertson); Mr. J. C. Patteson, European General Manager, Canadian Pacific Railway, and Mr. J. B. Thom, European Manager, Canadian National Railways, representing the C.P.R. and C.N.R. respectively; Brigadier R. Gardiner, Commandant, Transportation Training Centre, Royal Engineers, Longmoor; the Bishop of Portsmouth (Dr. W. L. Anderson); Messrs. W. P. Braund, A. E. Cabeldu, B. W. C. Cooke, A. Cowan, G. E. Cowie, Brigadier H. A. Joly de Lotbiniere, Brigadier R. F. O'D. Gage, Brigadier H. Graham, Mr. M. H. Hemming, Lt.-Colonel C. E. M. Herbert, the Reverend Aynsley Jones, Brigadier C. A. Langley, Messrs. J. P. McClelland, W. W. McIlwraith, Major-General Sir Donald J. McMullen, Messrs. R. A. McMullen, R. O. McMurtry, H. T. Penny, Colonel H. G. Pottle, Colonel W. Rae, Messrs. A. L. Rawlinson, H. Rudgard (representing Sir Eustace Missenden, Chairman of the Railway Executive), C. E. R. Sherrington, F. J. Gemmell Smith, C. W. Stokes, the Reverend G. C. Triffitt, Messrs. J. H. Wallace, C. H. V. Winter, C. F. Wood.

The window has as its centre feature St. Lawrence and as its other motive the Arms of Canada and of the nine provinces. The saint is depicted in a deacon's dalmatic, carrying in one hand the Book of Gospels and in the other a gridiron to show that he was martyred. The inscription is:—

"To the glory of God and in grateful remembrance of the staff of the Canadian National and Canadian Pacific Railways who fell in the war of 1939-45."

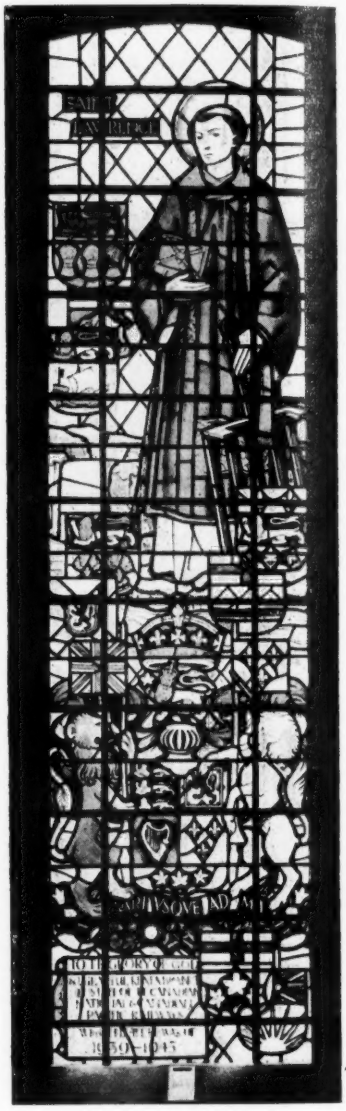
Longmoor, and its sister camp of Bordon, four miles away, has been identified with transport in both world wars and as the training ground of special supplementary reserves raised amongst British railwaymen. When war broke out in 1939, the camp became the Transportation Training Centre R.E. for all forms of transportation instruction. At one time it housed as many as 2,000 men; now it has about 900.

The four main-line British railways and the London Passenger Transport Board recognised the work done at Longmoor by their employees by each presenting a stained glass window to the Garrison Church. A description of the dedication ceremony, on May 7, 1939, was given in our May 12, 1939, issue.

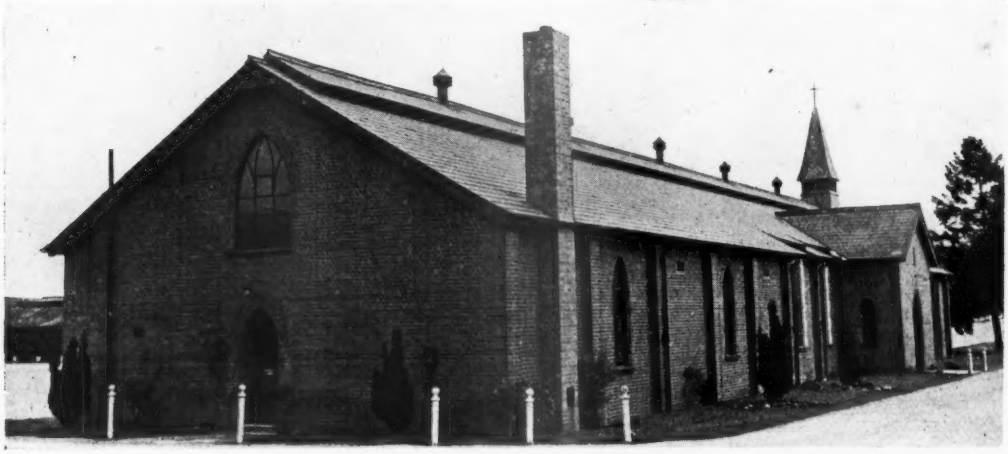
Canadian railwaymen were working in Britain some time before the arrival of the Railway Group. No. 7 Artisan Company of the Royal Canadian Engineers did considerable construction work in the Bordon area from August, 1942, onwards. The Canadian Railway Operating Group consisted of two operating companies and one workshops company. No. 2 operating company was formed early in May, 1943, in England, and trained at Longmoor. In August No. 1 Operating Company began to arrive at Longmoor.

The group was commanded by Lt.-Colonel F. E. Wootton, O.B.E., M.C., a Canadian Pacific officer. Among other of its jobs it was of considerable assistance to the British railways in the heavy pre-D-Day traffic. Subsequently it arrived in France in August, 1944, and operated in the North-West European theatre until June of the next year.

The idea of the Canadian window in the Garrison Church at Longmoor originated in a conversation in 1945 between Lt.-Colonel Wootton and Brigadier H. A. Joly de Lotbiniere, M.C., who was then Commandant, Transportation Training Centre, Royal Engineers. Back in Canada that winter, Lt.-Colonel Wootton began to develop the idea with Mr. D. C. Coleman, President of the Canadian Pacific, who in turn discussed it with Mr. R. C. Vaughan, President of the Canadian National. Enthusiasm in the project was maintained at the British end by the succeeding Commandant, Brigadier C. A. Langley, C.B.E., M.C., and the present one, Brigadier R. Gardiner, C.B.E.



The Canadian window



St. Martin's Garrison Church at Longmoor Camp

Railway Staff in 1947

The Railways (Staff) Return, 1948, published by His Majesty's Stationery Office, price 1d., is based on information received from the Railways Staff Conference relative to the week ended March 29, 1947. Comparisons are made with the week ended March 9, 1946. An editorial article on the statistics in the return appears on page 507.

The particulars relate to: (1) All staff employed by the railway companies of Great Britain (excluding the Manchester Ship Canal, the staff of which was 1,446 in March, 1946, and 1,395 in March, 1947); (2) railway staff employed by the London Passenger Transport Board; and (3) all staff employed by the Railway Clearing House.

Details of the numbers employed in the various departments are shown in Table I.

TABLE I—NUMBER OF PERSONS EMPLOYED IN THE VARIOUS DEPARTMENTS

	At March 29, 1947	At March 9, 1946
Men :—		
Officers, supervisory, clerical, etc.	83,380*	70,364
Conciliation	348,073	337,167
Shop and artisan	116,468	106,646
Electrical generating station and miscellaneous	4,400	7,584*
Ancillary	27,822	25,098
All men	580,143	546,859
Youths and boys :—		
Clerical, etc.	3,317*	3,854
Conciliation	15,485	17,212
Shop and artisan	9,860	9,945
Electrical generating station and miscellaneous	537	549*
Ancillary	1,292	1,177
All youths and boys	30,491	32,737
Women :—		
Officers, supervisory, clerical, etc.	21,283*	25,699
Conciliation	8,753	24,483
Shop and artisan	1,727	4,078
Electrical generating station and miscellaneous	7,308	6,958*
Ancillary	6,701	6,468
All women	45,772	67,686
Girls:—		
Clerical, etc.	2,330	2,932
Conciliation	217	619
Shop and artisan	368	584
Electrical generating station and miscellaneous	250	256
Ancillary	541	580
All girls	3,706	4,971
Total staff	660,112	652,253

* Includes police staff specified in Table II

and in each of the principal grades in Table II. With the exception of staff not employed directly (e.g., staff employed by contractors), all staff employed during the week of the census are taken into account, the figures representing the number receiving salaries or wages for the full week combined with the equivalent number of full-time workers where employees were paid for less than the complete week.

Average weekly earnings are shown in Table III (i) and 3 (ii). The figures in Table III (i) are exclusive of (*a*) clerical staffs and other classes of salaried employees; (*b*) workpeople who were receiving full or partial board and lodging in addition to cash wages; and (*c*) women and girls employed on a part-time basis as crossing keepers, waiting room and lavatory attendants, office cleaners, and so on.

As regards the departments for which separate figures are given, the conciliation staff consists mainly of workpeople concerned with the manipulation of traffic; the shop and artisan staff mainly comprises the workpeople employed on construction and repair work; and the other staff includes those employed in ancillary businesses (e.g., canal, dock and quay staff; marine staff; motor omnibus, etc., staff; hotel, dining-car and refreshment-room staff) and at electrical generating stations, etc., as well as police staff before 1947.

TABLE II—NUMBER OF PERSONS EMPLOYED IN EACH OF THE PRINCIPAL GRADES

Grade Classfn. No.		Male			Female			Total all persons	
		Adult	Junior	Total	Adult	Junior	Total	At March 29, 1947	At March 9, 1946
1	Capstanmen	904	11	915	—	—	—	915	912
2	Carters and vanguards	18,795	2,297	21,092	1,369	14	1,383	22,475	21,682
3	Carriage cleaners	5,812	56	5,868	2,526	9	2,535	8,403	8,014
4	Carriage & wagon examiners	4,392	—	4,392	—	—	—	4,392	4,209
5	Carriage & wagon oilers and greasers	904	799	1,703	98	2	100	1,803	1,879
6	Checkers	10,286	—	10,286	55	—	55	10,341	10,435
7	Cranemen	741	40	781	1	—	1	782	753
8	Crossing keepers	1,348	22	1,370	1,565	2	1,567	2,937	2,950
9	Engine cleaners	1,826	2,748	4,574	123	1	124	4,698	6,163
10	Engine drivers and motormen	43,189	—	43,189	—	—	—	43,189	43,716
11	Firemen and assistant motormen	38,630	4	38,634	—	—	—	38,634	39,307
12	Foremen and chargemen	7,543	—	7,543	75	—	75	7,618	7,706
13	Guards—goods	17,784	—	17,784	—	—	—	17,784	18,286
14	Guards—passenger	7,668	—	7,668	169	—	169	7,837	7,384
15	Hydraulic and pumping engine staff	641	1	642	2	—	2	644	682
16	Labourers	26,679	460	27,139	573	11	584	27,723	27,914
17	Lampmen	1,352	183	1,535	27	—	27	1,562	1,544
18	Loaders, callers off, ropers and sheeters	6,180	—	6,180	45	—	45	6,225	6,362
19	Loco. shed staff (excluding labourers)	10,980	186	11,166	68	—	68	11,234	11,281
20	Messengers	543	388	931	42	86	128	1,059	982
21	Number takers	1,246	594	1,840	60	7	67	1,907	1,974
22	Officers and clerical staff	52,804	3,164	55,968	21,041	2,369	23,410	79,378	76,124
23	Permanent way men	55,295	48	55,343	84	—	84	55,427	55,136
24	Pointsmen	272	4	276	4	—	4	280	268
25	Police staff, supervisory grades	592	—	592	—	—	—	592	592
26	Police staff, other grades	2,927	5	2,932	97	—	97	3,029	3,738
27	Porters—goods	15,823	731	16,554	884	15	899	17,453	20,785
28	Porters—passenger	26,825	3,520	30,345	1,999	42	2,041	32,386	34,732
29	Porter guards	476	—	476	34	—	34	510	518
30	Porter signalmen	1,644	—	1,644	48	—	48	1,692	1,702
31	Shop and artisan staff—supervisory grades	3,116	—	3,116	20	—	20	3,136	2,971
32	Other grades (excluding labourers and watchmen)	97,265	9,695	106,960	1,312	360	1,672	108,632	101,724
33	Shunters	19,074	—	19,074	2	—	2	19,076	19,488
34	Shunt horse drivers	129	7	136	—	—	—	136	147
35	Signal and telegraphmen	8,382	154	8,536	7	—	7	8,543	7,473
36	Signalmen	24,623	—	24,623	198	—	198	24,821	24,772
37	Signal box lads	30	1,795	1,825	25	5	30	1,855	1,858
38	Stationmasters, yardmasters, etc.	5,786	—	5,786	—	—	—	5,786	5,484
39	Supervisory staff (other than shop, artisan and police)	11,604	—	11,604	163	—	163	11,767	11,613
40	Technical staff	4,407	121	4,528	—	—	—	4,528	3,898
41	Ticket collectors	4,027	17	4,044	368	—	368	4,412	4,451
42	Traffic control staff	2,202	31	2,233	—	—	—	2,233	2,167
43	Watchmen	440	—	440	—	—	—	440	444
44	Miscellaneous grades	7,135	2,118	9,253	5,987	242	6,229	15,482	14,710
—	Ancillary businesses	27,822	1,292	29,114	6,741	541	7,242	36,356	33,323
	Total staff	580,143	30,491	610,634	45,772	3,706	49,478	660,112	652,253

TABLE III—AVERAGE EARNINGS IN ONE WEEK

	Week ended March 29, 1947	Week ended March 9, 1946
(i) *Wages Grades*		
Men :—	s. d.	s. d.
Conciliation staff	120 3	117 10
Shop and artisan staff	132 1	132 5
Other staff	127 8	124 6*
All men	123 6	121 6
Youths and boys :—		
Conciliation staff	45 5	45 7
Shop and artisan staff	47 8	46 5
Other staff	43 3	43 8*
All youths and boys	46 2	45 9
Women :—		
Conciliation staff	89 7	88 5
Shop and artisan staff	87 6	92 7
Other staff	64 1	68 9*
All women	87 4	88 4
Girls :—		
Conciliation staff	48 1	47 10
Shop and artisan staff	40 10	48 0
Other staff	†	†
All girls	43 6	47 10
(ii) *Salaried Grades*		
Men :—		
Clerical, supervisory, etc. (exclusive of officers)	140 8*	146 5

* Includes police staff specified in Table II

† The number employed was insufficient to provide a satisfactory basis for averages

The earnings shown include war bonus, etc., piecework payments and tonnage bonus, payments for overtime, Sunday duty and night duty, and all other payments for work performed, but exclude travelling and out-of-pocket expenses, and meal and lodging allowances.

In calculating the averages, the total amount of wages paid at each date has been divided by the number of staff receiving wages for the full week combined with the equivalent number of full-time workers where employees were paid for less than the complete week.

All workpeople paid at adult rates have been classified as men and women, while those paid at junior rates have been classified as youths, boys, and girls. The age at which adult rates are paid is usually 20 years for the wages staffs in the conciliation grades and 21 years for those in the shop and artisan grades and other departments.

In Table III (ii) similar figures are shown for clerical and supervisory grades exclusive of officers. They include police staff in 1947. Total salaries and wages in the calendar years 1945 and 1946 are shown as follows: 1946, £203,256,289; and 1945, £186,428,396.

American Railway Engineering Association

Annual meeting at Chicago, March 16-18

On March 16, 17, and 18 some 1,700 delegates assembled in Chicago for the annual meeting of the American Railway Engineering Association under the presidency of Mr. Armstrong Chinn, now retiring. Mr. C. H. Mottier, Vice-President and Chief Engineer of the Illinois Central Railroad, was elected President for the coming year, and Mr. F. S. Schwinn, Assistant Chief Engineer, Missouri Pacific Lines, became Senior Vice-President.

The retiring President reported a total membership of 2,334, the largest since 1932. The Committee of Co-operative Relations with the Universities, however, pointed out that, although the average and minimum monthly salaries paid by the railways to graduate recruits were $256 and $200 respectively—or $3 and $25 more than received by engineering graduates throughout the country—only 88 graduates remained on the railways in August, 1947, out of the 130 employed in 1946. The reason for this fall in numbers was attributed mainly to the poor prospects of promotion on railways.

Many of the subjects discussed at the meeting were influenced directly by the political situation, and, in particular, by President Truman's address to Congress on the position in Europe. Mr. Clark Hungerford, President of the St. Louis-San Fransisco Railway, emphasised the greatly increased burden that would fall on the railways in the event of a national emergency. He pointed out that if this burden was to be carried, they must be allowed the materials now, both to build new equipment and to overtake arrears of maintenance accumulated during the war.

Comparing railway operation today with that at the time of the transport crisis in 1922-23, he claimed that they were now doing a better job with 550,000 fewer freight wagons, 22,000 fewer locomotives, and 16,000 fewer passenger cars than they had then. Over $13,500,000,000 had been invested by the railways in improved equipment and facilities during the intervening 25 years, and it was this fact that had made so greatly improved operation possible. Moreover, the various lines had at present on order some 120,000 freight and 2,500 passenger cars, valued at $1,000,000,000.

Other speakers pointed out that once a national emergency arose there would be little chance of improving their position, and they must take the opportunity to plough back an appreciable share of their earnings into improvements during peacetime; also that railways, both individually and collectively, were conducting more research work than ever before and in a greater number of different directions.

Reports or papers were read on such subjects as pressure grouting to stabilise embankments that tended to slide; retaining walls and bridge abutments that had proved unsatisfactory or had failed, and the causes; and the use of soil pressure cells with electrical equipment for measuring pressures in the formation under moving loads.

Parliamentary Notes

Railway Clearing System Superannuation Bill

The Railway Clearing System Superannuation Bill was read the third time and passed in the House of Commons on April 21. The Bill was read the first time in the House of Lords on April 22 and referred to the examiners.

Questions in Parliament

Peak Hour Transport Problem

Mr. B. Janner (Leicester West—Lab.) on April 12 asked the Minister of Transport if he could make a further statement on the plan for later hours of opening for shops and restaurants as a means of helping the peak hour transport problem of London; and whether he had approached the unions concerned about those later hours of opening.

Mr. Alfred Barnes: The trade associations representing the West End shop managements have now informed me that the proposal is unacceptable to a majority of their members. I have their reply under consideration. The proposal was made by the Westminster North Transport Committee, which includes five trade union representatives out of 12 members, and was endorsed by the 14 chairmen of the transport committees in Central London set up to consider the staggering of working hours. Each of these committees includes trade union representation.

Mr. Janner: Can the Minister say whether he is likely to form an opinion after consideration has been given?

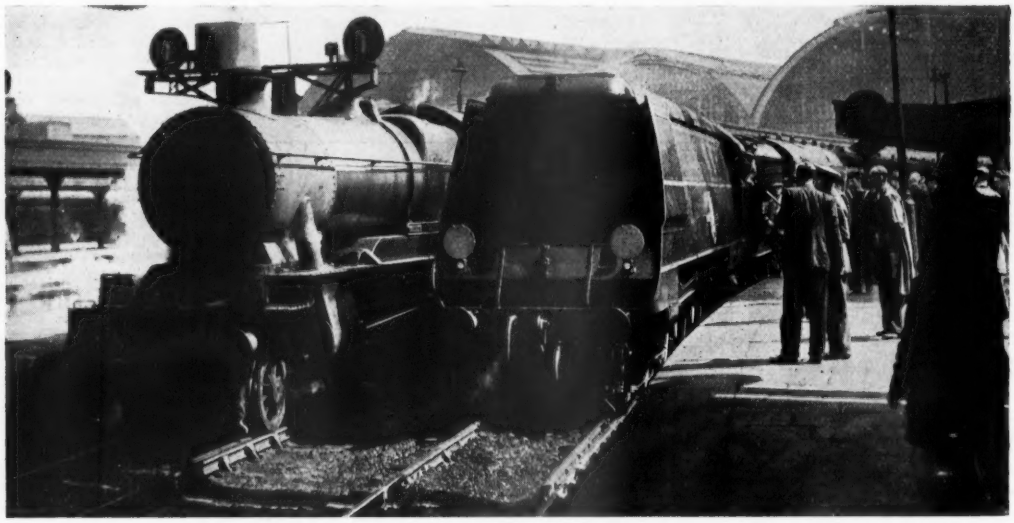
Mr. Barnes: I should like to make it plain that in all these matters there will be no decision imposed. It all depends on the co-operation of all concerned, particularly the staffs.

Press Facilities at Railway Accidents

Major J. A. Boyd-Carpenter (Kingston-on-Thames—C.) on April 12 asked the Minister of Transport if he would exercise his powers under section 4(1) of the Transport Act, 1947, and issue a general direction to the Transport Commission that representatives of the Press were not to be obstructed in carrying out their duties of photographing and reporting incidents connected with railway accidents.

Mr. Alfred Barnes: No, sir. This is a matter which should be left to the discretion of the British Transport Commission, which informs me that representatives of the Press covering railway accidents are permitted to enter railway premises on producing evidence of their identity, and are given every assistance

Southern Region Pacific on Exchange Trials at Paddington



"Merchant Navy" class Pacific "French Line, C.G.T." about to leave Paddington on the 1.30 p.m. to Plymouth on April 21, during the British Railways locomotive exchanges which began on April 19. The locomotive is equipped with an ex L.M.S.R. tender with water pick-up apparatus

possible in the circumstances by responsible railway officers.

Major Boyd-Carpenter: If I send to the Minister particulars of a case in which that discretion was exercised in precisely the contrary direction to the one of which he has informed the House, will he look into it?

Mr. Barnes: It would be better if Major Boyd-Carpenter sent it direct to the British Transport Commission and so saved time.

Major Boyd-Carpenter: In that case, will the Minister tell us who is responsible to this House for what they do?

Mr. Barnes: That has already been fully dealt with, and, in any case, I am informed there has been no complaint from the Press regarding particular matters of this kind.

Captain H. F. C. Crookshank (Gainsborough—C.): But is not nationalisation so perfect that there are not going to be any accidents?

There was no reply.

Railways and Air Charter Companies

Group-Captain G. R. Ward (Worcester—C.) on April 19 asked the Minister of Transport what financial interest British Railways had in air charter companies on January 1, 1947, and at the latest convenient date, respectively.

Mr. Alfred Barnes stated in a written answer: On January 1, 1947, the railway companies held a majority interest in one air charter company. This interest passed to the British Transport Commission on January 1, 1948. The air charter company owns twelve aircraft at the present time, which are wholly used for air charter work.

Railway Wagons

Squadron-Leader E. Kinghorn (Great Yarmouth—Lab.) on April 12 asked the Minister of Transport if he would state the number of railway wagons in use on the British railways in 1939; and the number in current use.

Mr. Alfred Barnes, in a written answer, stated: At December 31, 1939, the total stock of railway-owned and requisitioned privately-owned wagons was 1,247,800. Of this number, 18,745 railway-owned wagons were under or awaiting repair. I have no information as to the number of requisitioned privately-owned wagons out of service at that date. At December 31, 1947, the total operating stock was 1,218,000, of which 160,000 were under or awaiting repair, leaving 1,058,000 available for traffic.

Transport Users' Consultative Committee

Lord Gifford, in the House of Lords on April 21, asked the Government when it intended to implement the provisions of clause 6 of the Transport Act and set up consultative committees of users, and whether the Minister, in so doing, would make certain that two additional members, really representative of the travelling public, would be recommended for such consultative committees.

The Earl of Listowel (Minister of State for Colonial Affairs) replied: The Minister of Transport is about to invite nominations for the Central Transport Consultative Committee for Great Britain from the national bodies representative of the interests concerned. He proposes to appoint on this body two additional members, who will be the persons to be designated as the Chairman of the Transport Users' Consultative Committees for Scotland and for Wales. When setting up the transport users' consultative committees for various areas he will have fully in mind the assurance given in this matter on July 9, 1947.

Lord Gifford asked whether the Minister was aware that they had in London a body called the London Passengers' Association, which was the sort of body that was eminently suitable for the selection of one of those additional members.

The Earl of Listowel replied that he had no doubt that the Minister of Transport would bear that organisation in mind.

Austrian Railway Wagons

Mr. A. E. Bechervaise (East Leyton—Lab.) on April 19 asked the Secretary of State for Foreign Affairs how many railway wagons were allowed under the Peace Treaty to be taken out of Austria to the U.S.S.R., Hungary, and Roumania; how many had been taken but not returned; and was there any prospect of their return.

Mr. Hector McNeil (Minister of State), in a written answer, stated: No peace treaty has, of course, been concluded with Austria, and there is no provision in the terms of the draft Austrian Treaty as at present drafted for the removal of any Austrian railway wagons from Austria.

Chiromo Railway Bridge

Colonel A. D. Dodds-Parker (Banbury—C.) on April 21 asked the Secretary of State for the Colonies what action he was taking, in consultation with the Ministry of Supply, to make available material to repair or replace the broken Chiromo railway bridge in Nyasaland before 1950.

Major C. P. Mayhew (Parliamentary Under-Secretary of State for Foreign Affairs), who had been asked to reply, wrote: As soon as the Secretary of State for the Colonies was informed of the carrying away of the temporary bridge at Chiromo he asked the Minister of Supply to authorise the steel needed to build a new bridge. The material has been authorised, and the contractors are getting on with the work as quickly as possible. I understand, however, that it is unlikely to be ready for traffic before the early months of 1950.

RAILWAY EQUIPMENT EXPORTS FROM CANADA.—Mr. Arthur Bryan, Canadian Commercial Counsellor in London, announced recently that Canada has received its first order for railway equipment from Egypt, the Egyptian State Railways having ordered 20 locomotives. During 1947, Canada exported locomotives, wagons, coaches, and components valued at almost $20 million, Mr. Bryan stated. More than half this amount was taken by France and its colonies, while other large purchasers were Southern Rhodesia, Turkey, Nigeria, Belgium, Mexico, and Newfoundland. Mr. Bryan added that Canadian shops were working at capacity production to fill orders for many countries throughout the world. The Indian State Railways have placed an order for 90 locomotives and 350 tank wagons. This year, South Africa will receive 450 ballast and flat wagons from Canada, while 6,200 freight, cattle, and fruit wagons are scheduled for delivery to that country in 1949. In addition to these, Canada will deliver 158 railway wagons and coaches to Newfoundland; cane wagons to Jamaica; and box wagons to the Pacific Great Eastern Railway, which has recently been extended (see report in our April 26, 1946, issue).

Notes and News

Assistant Chief Draughtsman Required.—An assistant chief draughtsman with wide experience of steam, diesel, and electric locomotive design, is required by a firm of locomotive manufacturers. See Official Notices on page 531.

Retail Prices Index.—On March 16 the official index figure, which measures changes in the average level of retail prices compared with the level at the base date, June 17, 1947 (taken as 100), was 106, the same figure as on February 17.

Transportation (B.N.A.F. and C.M.F.) Officers' Reunion.—At a recent reunion of Transportation (B.N.A.F. and C.M.F.) officers, attended by nearly 90 persons, it was decided to hold an informal meeting in London each month. It is now announced that such a meeting will be held at the Tivoli Buffet, near the Tivoli Cinema, Strand, W.C.2, on the second Friday in each month, commencing on May 14.

Metropolitan-Cammell Employee in Silver Wedding Broadcast.—Among those who took part in the B.B.C. Royal Silver Wedding Programme on Monday evening, April 26, was Miss Parsons, Chargehand French Polisher at the Saltley works of the Metropolitan-Cammell Carriage & Wagon Co. Ltd. Miss Parsons was presented to their Majesties when they visited the company's works to inspect the coaches built for their use during their tour of South Africa last year.

British Railways Extend Cheap Fare Facilities.—From June 1 the Railway Executive has decided to extend the scope of cheap fare facilities as an experimental arrangement. The radius of the existing cheap day tickets from a number of places will be extended from approximately 20 to 30 miles. In some cases the present mid-week arrangement will be extended to any day of the week, including Sundays. Circular tour tickets at approximately three-quarters single fare, available for three months, will be restored on the same date.

International Transport Statistics.—A recommendation has been made to the Economic & Social Council of the United States by the U.N. Transport & Communications Commission that a working group of experts in the field of transport and communications should be set up to decide the economic and technical statistical requirements in the sphere of transport. Prior consideration should be given, it was suggested, to statistics of an economic as against a technical nature. The importance of information being available on economic matters was emphasised by M. Jean Goursat (France) and Sir H. Osborne Mance (U.K.) who said that such information would permit the forecasting of employment trends in transport and communication.

Holyhead—Kingstown Daylight Sailings.—Daylight sailings for travellers to and from Ireland by the Holyhead—Kingstown route are to be restored by the London Midland Region for Whitsun, and will continue throughout the summer. These additional services will begin on May 14, and will continue (weekdays only) until September 25, inclusive. Departures will be 2.50 p.m. from Holyhead, due Kingstown Pier 6.5 p.m., and 9.30 a.m. from Kingstown (arrive Holyhead 12.45 p.m.); connecting restaurant car expresses will leave Euston for Holyhead at 8.15

a.m., and Holyhead for Euston at 1.35 p.m. Passengers to and from Ireland by the Holyhead—Kingstown and Heysham—Belfast sea routes of the London Midland Region, also by the Stranraer—Larne route (Scottish Region), will require special sailing tickets for voyages in each direction during the period June 11-September 11, both dates inclusive. Applications may be made up to eight weeks before the date of travel.

Reduced Price of Steel Sheet.—It has been announced by the British Iron & Steel Federation that as from April 19, prices of certain qualities of cold reduced steel sheets produced by the continuous strip mills at Ebbw Vale and at Shotton, will be reduced by £1 to £26 11s. a ton. A statement issued by the Sheet Makers' Conference pointed out that reductions were made on the basis of costs of raw materials and services as they exist today, and were made possible by the modernisation which had taken place in the steel-sheet industry. The reduction means that sheet prices are only 27 per cent. above the 1938 level.

Awards in Scottish Region Ambulance Competition.—At the headquarters of the St. Andrew's Ambulance Association, Glasgow, on April 9, six railway ambulance teams from the former L.M.S.R. Scottish Area, which previously had qualified in district eliminating examinations, competed for the Caledonian Ambulance Cup and the Highland Railway Ambulance Cup. A high standard of proficiency was displayed, and after the contest the awards were made by Mr. T. F. Cameron, Chief Regional Officer, Scottish Region, Railway Executive, who was supported by Mr. T. H. Moffat, Deputy Regional Officer, and other railway officials. From a possible total of 400 marks, the results were: Dundee West, 340½ marks, winning the Caledonian Ambulance Cup; Motherwell, 338½ marks, winning the Highland Railway Ambulance Cup; Glasgow (Eglinton St.), 322½ marks; Kilmarnock, 306½ marks; Edinburgh (Princes St.), 306 marks; Greenock, 284 marks. Members of the team winning the Caledonian Cup received a barometer, and the team gaining the Highland Railway Ambulance Cup received a memento from the Railway Executive.

G.N.R.(I.) "UG" Class Locomotives.—In an article entitled "New Locomotives for G.N.R.(I.)," in our April 16 issue, reference was made to the original "UG" series of 0-6-0 locomotives as having been built by Beyer, Peacock & Co. Ltd., in 1936. These five locomotives were built in 1937, at the G.N.R.(I.) Dundalk Works.

The Jet-Propulsion Engine.—Mr. W. T. Winter, A.M.I.Mech.E., will give a paper entitled: "The Development of the Jet-Propulsion Engine," to the Society of Engineers, on May 3 at 5.30 p.m. The meeting will be held in the apartments of the Geological Society, Burlington House, London, W.1, and proceedings will open at 5 p.m. with a social gathering of members and visitors.

British Railway Coaches for Iraq.—Four railway coaches constructed at Birmingham for the Iraqi State Railways were included in a 8,180-ton cargo loaded at Newport Docks by the ss. *Tabaristan* this week. It was the second consignment of railway coaches for Iraq to be shipped at Newport Docks this year. They were loaded aboard by means of the dock authorities' 50-ton floating crane.

Winsford, L.M.R., Accident Inquiry.—Lt.-Colonel G. R. S. Wilson opened the Ministry of Transport inquiry at Crewe on April 22, into the collision at Winsford, Cheshire, on April 17 (see our April 23 issue). He made it clear that the pulling of the communication cord was not the cause of the accident, but happened to produce a set of circumstances which did, perhaps, lead to the accident. He wished to dispel any impression that it might be dangerous to pull a communication cord, and said that in this case the rules and block telegraph regulations were not properly carried out. Evidence was given by the driver of the Glasgow-Euston passenger train that it had been standing for 16 or 17 min. before the accident. The driver of the mail train said he applied the brakes fully as soon as he saw a man waving a red lamp, and tried to reverse, but could not get the catch out. The inspecting officer said he was perfectly satisfied that the driver of the mail train had done all he could to stop it.

Indian State Railways Dinner.—The Indian State Railways annual dinner will be held on May 31 next, at 7 for 7.30 p.m., at Chez Auguste, 47, Frith Street, W.1 (off Shaftesbury Avenue). Tickets, price 15s., are obtainable from the Secretary, I.S.R. Dinner Club, 16, St. James' Square, S.W.1 (the Secretary is Mr. N. Calder, but cheques should not be drawn in his favour, by name). Lounge suits will be worn. The chair will be taken by Sir Leonard Wilson, K.C.I.E., and Colonel Ralph Emerson, late Chief Commissioner of Railways, India, will also speak.

Goods Traffic in German Occupation Zones.—Agreement was reached at a recent meeting in Geneva of the Inland Transport Committee of the Economic Commission for Europe for the movement of approximately 2,750 trains of international goods traffic in the occupation zones of Austria and Germany during April. This total is some 25 per cent. above the movements in April last year, although a few trains below the March programme. Inland waterways in the occupation zones are scheduled to carry more than 220,000 tons of international traffic during the month, reports presented to the meeting showing that the situation for inland water transport has improved materially.

Gas Turbines for Industry and Transport.—Details of Power Jets (Research & Development) Limited exhibit at the British Industries Fair, Birmingham, were announced by Mr. W. E. P. Johnson, Executive Director of the Company, at a Press reception on April 23, which was attended by Mr. G. R. Strauss, Minister of Supply. Two models, which demonstrate the application of a gas turbine to the manufacture of nitric acid, were chosen for exhibition, because this topic was an example of the application of this machine in a process and there were a great number of other chemical processes to which their technology could apply. In connection with the coal-burning gas-turbine locomotive, Mr. Johnson said it should be able to run at an operating cost of approximately half that of the present steam type, and about 40 per cent. less than that of a diesel, the basis of comparison being cost per 1,000 rail h.p.-hr.

Eastern Region Locomotive Exchanges.—Test runs of a L.M.R. "Duchess" class Pacific will be made on the 1.10 p.m. down and 7.50 a.m. up Kings Cross—Leeds trains from May 4 to 7. Between the same dates an Eastern Region "A4" Pacific will run tests between Paddington and Plymouth on the 1.30 p.m. down and 8.30 a.m. up expresses. A Western Region "King" will make preliminary Kings Cross—Leeds journeys from May 10-13, in readiness for tests between May 18 and 21. The same trains will be worked by a Southern Region "Merchant Navy" Pacific from May 17-20 (preliminary runs), and May 25-28 (tests). On May 17 an Eastern Region "A4" Pacific will begin preliminary runs between Euston and Carlisle on the 10 a.m. down and 12.55 p.m. up trains, continuing until May 20. Test runs on these services will be made from May 25-28. On May 31 an engine of the same class will begin preliminary runs between Waterloo and Exeter on the 10.50

Sir James Milne Inspecting Locomotive 7001

Sir James Milne at Paddington Station on April 23, inspecting "Castle" class locomotive 7001, formerly named "Denbigh Castle" and now renamed after him

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

THE RAILWAY HANDBOOK provides the railway student with a collection of useful statistics and information relating to the railways of Great Britain and Ireland. In addition, in matters of international interest, such as speed and electrification progress, the book extends its scope to cover the whole world in order to present a complete picture of these increasingly-important developments. 120 pp. Dy. 8vo. Paper covers. *Price 5s. By post 5s. 3d.*

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ALUMINIUM: Capacity available for gravity and pressure die casting. Large modern plant.—Box DX360, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE CORONATION SCOT. New 4-6-2 locomotive and 9-coach trains built specially for working the L.M.S.R. accelerated 6½-hour express service. Paper. 12 in. by 9 in. 16 pp. Folding plate. Illustrations and diagrams. 3s. *By post 3s. 2d.*

THE FIRST PASSENGER RAILWAY. By Charles E. Lee. A history of the Swansea & Mumbles Railway, which extends over 136 years. Cloth. 8½ in. by 5½ in. 91 pp. Illustrated. 5s. *By post 5s. 3d.*

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a.m. down and 12.42 p.m. up, the tests on these trains being scheduled for June 8-11. A Southern Region "West Country" Pacific will begin working on the Eastern Region Marylebone—Manchester route on May 31, the preliminary runs lasting until June 3 and the tests extending from June 8-11. The trains concerned will be the 10 a.m. down and 8.25 a.m. up.

Fire Protection Association: Address.—As from Monday, April 19, the address of the Fire Protection Association has been changed to 84, Queen Street, London, E.C.4. Telephone: Central 4642.

Further Increase in U.S. Goods Rates.—New interim rates authorised for the United States railways by the Interstate Commerce Commission on April 19 incorporate previous increases amounting to 20 per cent., together with a further average addition of 4 per cent. There has thus been an increase of 24 per cent. over the rates in force last summer. The railways had applied for a 27 per cent. increase, and later amended this to an application for 30 per cent., as reported in our December 12, 1947, issue.

Experimental Underground Platform Signs, London Transport.—Station signs on Underground platforms, made of woven spun glass, which give better visibility by eliminating reflection from electric lights, are being tried out experimentally by London Transport at Strand Station. The signs, which incorporate the familiar "bullseye" device, are composed of strands of glass woven together like cloth and placed between two pieces of plain glass. They are being installed on the north and southbound platforms in place of the present station name frieze. If passengers report that they find the new signs easier to read, they may be extended to other Central Area stations.

A Century of Pennsylvania Dividends.—With the dividend of 1 per cent., or 50 cents a share, paid on April 15, the Pennsylvania Railroad began its second century of unbroken cash returns on its stock. Terming this a "unique distinction in American business," Mr. M. W. Clement, the President, in a special message to the stockholders, said: "Your company's stock has the longest record for continuous cash returns of any listed on the New York Stock Exchange, and the only one extending over 100 years." Pointing out that payment of this dividend marks the 101st consecutive year of cash returns to the company's stockholders, Mr. Clement informed them that it "was declared partly from earnings of prior years." The aim of the management, he continued, was always to pay dividends out of current earnings. Ability to do so depended not only on the efforts of the entire organisation of officers and employees, but also on the continuing understanding of the regulatory authorities in authorising rate changes necessary to meet increased costs. They believed substantial progress was being made in both these directions. Pennsylvania Railroad stockholders have received cash payments in every year beginning with 1848, first as interest and, since 1856, as dividends.

Rush Job by London Transport Electrical Engineers.—London Transport engineers have been working night and day to put right the failure of the South Wimbledon electrical convertor which resulted in a 20 per cent. reduction of the Northern Line service between Morden and Kennington on April 27. A 13-ton portable convertor was rushed by four lorries on that day from the manufacturers at Hersham, Surrey, to South Wimbledon. The portable convertor is one of a type which has been designed by London Transport to be held in readiness for emergency use on any part of the Underground.

British Electrical Exports.—The annual report for 1947-1948 of the British Electrical & Allied Manufacturers' Association states that electrical exports from Great Britain advanced rapidly after the war, and in 1947 reached a value of about £72,000,000. This is calculated to represent an increase in volume of some 66 per cent. over the exports in 1938. Firms belonging to the association exported 69,400 tons of electrical machinery in 1947, compared with 44,600 tons in 1938, an increase of 55·5 per cent. Electrical generator exports were doubled. Switchgear also showed a large increase, from 9,700 tons in 1938 to 11,600 tons in 1947. Fractional horsepower motor exports doubled in quantity, the value amounting to over £800,000.

New Posters for British Railways.—A number of posters depicting town and countryside in the area served by British Railways, Eastern and North-Eastern Regions, have been issued recently. Two posters, "Cambridgeshire" and "Yorkshire Dales," by Mr. K. Steel and Mr. L. Squirrell respectively, are part of a series, the subjects of which are representative of counties served by these regions. The majority of the Cambridge colleges are brought out in colour and indicated by the appropriate coats of arms in a poster, from Mr. F. Taylor's painting. The poster, "Herefordshire," is a further issue in the county series and was reproduced from a black and white photograph; other posters include "The Royal Border Bridge," by Mr. Terence Cuneo, "Suffolk for Sunshine," by Mr. K. Steel, and "Scarborough," by Mr. F. H. Mason.

Associated Electrical Industries Limited.—At a board meeting held on April 9, the directors of Associated Electrical Industries Limited recommended the payment, for the year ended December 31, 1947, of a final dividend on the ordinary stock of 7½ per cent. and a bonus of 2½ per cent., both less income tax at 9s. in the £; and making, with the interim dividend already paid, a total distribution of 15 per cent. for the year, which is the same as that of the previous year. The consolidated net profit of the Associated Electrical Industries group for the year 1947, subject to audit, after providing for depreciation, taxation, and provisions for reserves and contingencies, was £1,516,000, compared with £1,492,000 for 1946. The annual report and audited accounts will be presented at the annual general meeting to be held on Wednesday, May 5.

Rapid Discharge of Freight at Grangemouth.—The ss. *Torquay*, carrying 700 tons of German logs for Scottish sawmills, was discharged at the British Railways port of Grangemouth on April 19 in 8 hr. 20 min., an average rate of discharge of 28 tons per crane-hour. Three cranes were employed on the job.

F.B.I. at the B.I.F.—This year again, the Federation of British Industries will have stands at the London and Birmingham sections of the British Industries Fair, which opens next Monday, May 3, and will remain open until May 14. Major-General R. Briggs, C.B., D.S.O., will be in charge at Olympia, on Stand No. A.9, while Major C. R. Dibben, O.B.E., will be in charge at Castle Bromwich, on Stand No. B.321, which will include two private offices for the convenience of members who wish to arrange confidential business discussions.

Mullard Electronic Products Limited.—As from April 22, the Mullard Wireless Service Co. Ltd. has changed its name to Mullard Electronic Products Limited. This change of name has been made necessary by the expansion of the company's activities from the purely radio field into other branches of electronics—particularly those with applications in industry, science, and communications. The company began life in 1920 as the Mullard Radio Valve Co. Ltd. New research laboratories at Salfords, in Surrey, were opened towards the end of 1946, and important work in connection with industrial electronics is being carried out. Among the company's products are magnetic filters, making use of the special magnetic material, Ticonal. Filters of this type have been fitted to the London Midland Region diesel-electric locomotives now in operation and under construction, and will be used on the diesel-electric locomotive being built for the Southern Region.

British Main-Line Diesel Mileage.—Working in regular express passenger service between Derby and London (St. Pancras) diesel-electric locomotive No. 10000 of the London Midland Region has been rostered since April 6 to cover on these duties about 3,100 miles per week of six days. On its normal schedule, the unit leaves Derby at 8.55 a.m. and 7.37 p.m.,

and St. Pancras at 2.15 p.m. and 11.50 p.m. each weekday. This new working represents a considerable increase in mileage compared with the time of its introduction into regular passenger service on February 23. Then the weekly mileage was about 1,550.

Naming Ceremony at Waterloo.—Two "Battle of Britain" class 4-6-2 engines were named *Sir Frederick Pile* and *Anti-Aircraft Command* at Waterloo Station, Southern Region, on April 28. The first was named by Sir Frederick Pile and the second by Lt.-General O. M. Lund, G.O.C.-in-C. Anti-Aircraft Command. As well as the guard of honour provided by Anti-Aircraft Command, there was a detachment of railwaymen from Eastleigh and Ashford Works, who previously were in anti-aircraft defence with the Home Guard.

London Midland Region Ambulance Final.—With a score of 450½ points out of a possible 580, Wolverton (Bucks.) won the London Midland Region Final Ambulance Competition at Manchester on April 23. The team thus secured the Challenge Shield it missed by only 7 points last year. Camden "A" gained second place with 447½ points and Horwich (Lancs.) Machine Shop came third with 414 points. Other teams in order of merit were Bolton Loco., Castlethorpe (Bucks.), Peterborough, Derby Boiler Shop "B," Nuneaton Traffic, and Blackburn. The presentation of the Challenge Shield and other prizes by Mr. W. P. Allen, Member of the Railway Executive, was attended by Mr. G. L. Darbyshire, Chief Regional Officer, and Mr. H. J. Comber, Chief Officer for Labour & Establishment, London Midland Region.

Anglo-Soviet Talks on Berlin Traffic Restrictions.—Discussions on Russian restrictions on rail and water traffic between Berlin and the western zones of Germany have been begun, with the approval of the American authorities, between Major-General Brownjohn, British Deputy Military Governor, and General Dratvin, Marshal Sokolovsky's deputy. The restrictions reported in our issues of April 9 and 16 were increased on April 22 by a telephoned Russian order refusing passage to the two coaches of the French "Nord Express" normally attached to the westbound train from Berlin, thus cutting the last passenger train link between Berlin and the West. The pretext given was that no agreement for the train to run had been made between the Russians and the western powers. The French, who were chiefly affected by the new move, were reported to be starting a bus service to replace the coaches.

Forthcoming Meetings

May 3 (*Mon.*).—The Society of Engineers, at the Geological Society, Burlington House, London, W., at 5.30 p.m. "The Development of the Jet Propulsion Engine," by Mr. W. T. Winter, A.M.I.Mech.E.

May 11 (*Tues.*).—The Institution of Civil Engineers, Great George Street, Westminster, S.W.1, at 5.30 p.m. "Coast Erosion and Sea Defence, with Special Reference to Problems on the East Coast of England associated with the London & North Eastern Railway," by Mr. T. H. Seaton, M.I.C.E. "The Effect of Winds and Tides on Sea Coast Defence Works in North Wales," by Mr. C. R. Irving.

Railway Stock Market

Largely owing to international uncertainties and the Palestine news, stock markets have remained cautious. Buyers were holding off, and British Funds were easier earlier in the week, awaiting discussion of the Finance Bill which may clear up problems arising from the investment income levy. The recent rally in British Funds reflected the fact that yields had reached more attractive levels, whereas those on many leading industrial shares are none too generous at below 4 per cent. and higher payments will have to be deferred until dividend limitation is abandoned. There are still many uncertainties being discussed in the market, among which is the effect on gilt-edged if British Gas stock were given maturity dates of 1960-70. This might have a very adverse influence on longer-dated stocks such as the Transport and Electricity stocks issued this year. Alternatively, however, if the gilt-edged market were strong and active when British Gas stock were issued, the effect might be to make the latter go to a premium rather than to depress Transport and Electricity stocks.

After an earlier rise, 3 per cent. Transport (1978-88) eased to 95⅝, the 1967-72 stock to 97, and the 1968-73 stock to 98⅛, but prices were all higher on balance. Metropolitan Assented has changed hands up to 54¼, and the feature in railway stocks has been a sharp advance in Canadian Pacifics to 22¼ on the agreement for exploration of 1,800,000 acres of the company's oil and gas rights.

Still awaiting the Anglo-Brazil agreement, Brazil rail and utility stocks lost ground, including San Paulo, which after changing hands over 190 came back to 184; although in this case all that remains is for Brazil to hand over the money already agreed for the railway. There is also the question of an agreement as to the amount to be paid for ancillary assets, but the view prevails that the current market price is likely to prove well below the compensation money that will be received eventually.

Leopoldina have eased to 15½ at the time of writing, and the preference stock to 45¾, but the 4 per cent. debentures were steady at 79, with Leopoldina Terminal debentures 74. Great Western of Brazil shares, however, came back to 75s. Central Uruguay and other Uruguayan rail stocks were firm on the recent announcement of a panel to determine the share-out moneys applicable to individual stocks.

These days a capital issue by a railway company is unique, and the pending offer by Nyasaland Railways is likely to attract considerable attention. The company is increasing borrowing powers to £6,000,000, and funds are needed for equipment, etc., to bring the railway up-to-date to meet increased demands resulting from development of the territorities it serves. An estimated amount of £1,460,000 is required and shareholders will be given the opportunity of participating in subscription for the new capital. This, the market expects, will be in the form of debentures. The company's existing 5 per cent. "A" debentures are quoted around 101½, and the £1 ordinary shares at 4s. 7½d. There has been more activity in Beira Railway bearer shares at around 56s.

The good yields maintained a fair amount of activity in iron and steel shares. Babcock & Wilcox have strengthened to 71s. 9d., awaiting the results, and Stewarts and Lloyds were 57s., following publication of the profit figures. Locomotive building and engineering shares became firmer, but less active. Beyer Peacock changed hands at 23s. 3d., North British Locomotive were 25s. 3d., and Vulcan Foundry 28s. 3d. Charles Roberts continued to transfer around £7¼.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1945/46	No. of Week	Aggregate traffics to date: Total 1947/8	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Central America	Antofagasta ..	834	18.4.48	65,870	+ 20,250	16	830,800	+ 227,860
	Bolivar	174	Mar., 1948	$107,937	— $3,698	13	$294,242	— $46,070
	Brazil	—	—	—	—	—	—	—
	Cent. Uruguay ..	970	19.4.48	41 804	+ 130	42	1,484,878	— 76,970
	Costa Rica	262	Mar., 1948	25,390	— 7,138	39	292,351	+ 39,451
	Dorada	70	Feb., 1948	16,700	— 12,900	9	39,800	— 20,500
	G.W. of Brazil ...	1,030	17.4.48	34,500	+ 2,100	16	600,100	+ 8,900
	Inter. Ctl. Amer. ..	794	Feb., 1948	$1,144,611	— $ 1,242	9	$2,402,164	+ $74,903
	La Guaira	22½	Mar., 1948	$123,329	— $6,679	14	$291,639	— $63,436
	Leopoldina	1,918	17.4.48	57,227	— 4,690	16	855,158	— 153,609½
	Midland Uruguay ..	319	Feb., 1948	16,405	+ 8,378	35	143,912	+ 10,100
	Nitrate	382	15.4.48	13,338	+ 3,869	16	86,329	+ 27,534
	N.W. of Uruguay ..	113	Feb., 1948	5,261	+ 1,916	35	40,635	— 3,127
	Paraguay Cent. ..	274	16.4.48	₲61,318	+ ₲5,456	42	₲2,759,695	+ ₲112,065
	Peru Corp.	1,059	Mar., 1948	168,201	+ 13,122	39	1,527,280	+ 170,666
	Salvador	100	Feb., 1948	c309,000	+ c65,000	35	c1,381,600	+ c252,600
	San Paulo	153½	—	—	—	—	—	—
	Taltal	156	Mar., 1948	11,805	+ 8,880	39	70,410	+ 32,780
	United of Havana ..	1,301	17.4.48	121,373	+ 1,033	42	3,084,801	+ 405,974
	Uruguay Northern	73	Feb., 1948	1,261	+ 481	35	9,057	— 965
Canada	Canadian National ...	23,535	Mar., 1948	9,662,750	+ 575,250	14	26,667,500	+ 1,598,500
	Canadian Pacific ...	17,037	Feb., 1948	6,071,500	+ 812,750	9	12,303,000	+ 1,204,500
Various	Barsi Light†	202	Mar., 1948	25,432	— 1,455	52	295,800	+ 23,370
	Beira	204	Feb., 1948	111,097	+ 20,529	22	580,320	+ 134,080
	Egyptian Delta ...	607	20.3.48	18,195	+ 1,076	51	608,291	— 45,846
	Gold Coast	536	Dec., 1947	204,032	— 8,365	39	1,392,691	— 230,301
	Manila	—	—	—	—	—	—	—
	Mid. of W. Australia	277	Feb., 1948	21,855	+ 5,112	35	184,383	+ 48,562
	Nigeria	1,900	Jan., 1948	521,787	+ 59,708	44	3,899,303	— 20,011
	Rhodesia	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
	South African ...	13,323	27.3.48	1,224,978	— 1,370	52	65,631,700	+ 5,464,102
	Victoria	4,774	Jan., 1947	1,480,357	+ 164,562	31	—	—

† Receipts are calculated @ 1s. 6d. to the rupee